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Transcript Exhibit(s)

Docket #(s): G-01551A-10-0458

Exhibit # : A8, A9, A10, A11, A12, A13, A14, A15, A16
A17, A18

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To: Docket Control

Date: August 17, 2011

Re: Southwest Gas Corporation / Rates
G-01551A-10-0458
August 10, 12, and 15, 2011
Volumes I through III, Concluded

STATUS OF ORIGINAL EXHIBITS

FILED WITH DOCKET CONTROL

Arizona Investment Council (AIC Exhibits)

1 through 3

Cynthia Zwick (Zwick Exhibits)

1 and 2

Natural Resource Defense Council (NRDC Exhibits)

1 and 2

Residential Utility Consumer Office (RUCO Exhibits)

1, 2, 3 (Administrative Notice), 4 through 16

Southwest Energy Efficiency Project (SWEEP Exhibits)

1 and 2

Southwest Gas Corporation (A Exhibits)

1 through 18

Please note, to comply with Docket Control's filing requirements, we removed Exhibits A-1 through A-13 from binders. We removed and made copies of any tabs included within the exhibits.

Staff (S Exhibits)

1, 3, 5 through 9, 11, 12

CORRECTIONS TO INDEX OF EXHIBITS

Please see attached corrected page 512. Under the column "No.", Line 17.5 has been corrected from RUCO-3 to RUCO-4. Line 18.5 has been corrected from RUCO-4 to RUCO-5. Only the column "No." needed correction. We apologize for the inconvenience.

EXHIBITS RETURNED TO PARTIES

Residential Utility Consumer Office (RUCO Exhibits)

17 Not admitted

EXHIBITS NOT UTILIZED
Not given to Court Reporter

Staff (S Exhibits)

10

CONFIDENTIAL EXHIBITS
Given to ACALJ Nodes

Staff (S Exhibits)

2 and 4

Copy to:

Mr. Dwight D. Nodes, ACALJ
Mr. Justin Lee Brown, Southwest Gas Corp.
Ms. Robin Mitchell, Staff
Mr. Daniel Pozefsky, RUCO
Mr. Michael M. Grant, AIC
Mr. Timothy Hogan, SWEEP
Mr. Timothy Sabo, TEP
Ms. Laura E. Sanchez, NRDC
Ms. Cynthia Zwick

EXHIBIT
A-8

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
Docket No. G-01551A-10___

PREPARED DIRECT TESTIMONY
OF
JEROME T. SCHMITZ

ON BEHALF OF
SOUTHWEST GAS CORPORATION

NOVEMBER 12, 2010

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of
Prepared Direct Testimony
of
Jerome T. Schmitz

Southwest Gas Corporation
Docket No. G-01551A-10___

BEFORE THE ARIZONA CORPORATION COMMISSION

Prepared Direct Testimony
of
JEROME T. SCHMITZ

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Jerome Schmitz. My business address is 5241 Spring Mountain Road, Las Vegas, Nevada 89150.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or the Company) in the Corporate Engineering Staff department. My title is Director/Engineering Staff.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously testified before the Arizona Corporation Commission (Commission).

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I sponsor testimony from an operations perspective supporting the Company's request for rate relief for its pipe replacement program and for a pilot program to replace customer-owned yard lines.

Q. 6 Please summarize your prepared direct testimony.

A. 6 My prepared direct testimony addresses the following key issues:

- Pipe Replacement, including Southwest Gas' request for rate relief supporting its 20-year plan for the replacement of early vintage plastic pipe ("EVPP"), and
- Customer-owned yard lines, including Southwest Gas' request to implement a pilot program to assist customers in managing their aging facilities.

II. PIPE REPLACEMENT

Q. 7 What is Southwest Gas proposing in this case with respect to pipe replacement?

A. 7 Southwest Gas is requesting specific rate treatment consistent with its distribution pipeline integrity management program and its EVPP.

Q. 8 What is distribution pipeline integrity management?

A. 8 Distribution pipeline integrity management is a risk-based process to gather and evaluate information about gas distribution systems and to prioritize and implement actions based on that information to maintain the safety and integrity of those systems.

Q. 9 Please briefly describe Southwest Gas' distribution pipeline integrity management process?

A. 9 Southwest Gas has had some form of distribution pipeline integrity management since the mid-1980s. In the mid-1980s, Southwest Gas implemented a process for the prioritization of its Aldyl A ("AA") pipe replacement in Tucson. Then, in 2000, Southwest Gas implemented a more structured approach to evaluate its distribution pipe using a relative risk-ranking algorithm known as the Distribution Pipeline Integrity ("DPI") process.

Q. 10 What is the DPI process?

A. 10 The DPI process is an annual evaluation and assessment for distribution pipe outlined in Southwest Gas' Operations Manual. From the DPI assessment, Southwest Gas determines whether to schedule a particular segment of pipe for replacement or whether to implement other risk control practices. The assessment criteria for the DPI include: type of pipe; operating pressure; pipe coating; leakage; class location of pipe, such as proximity to buildings; environmental conditions, such as coating condition; pipe condition; pipe cover; potential for external damage; soil conditions; cathodic protection system effectiveness; and type of customer(s) served.

Q. 11 Are there federal and/or state regulations for distribution pipeline integrity management?

A. 11 Yes. There are new federal regulations for a Distribution Integrity Management Program ("DIMP"), which are expected to be adopted by the state.

Q. 12 What are the new DIMP regulations?

A. 12 On December 4, 2009, Pipeline and Hazardous Material Safety Administration ("PHMSA") issued its new DIMP regulations (49 CFR Subpart P). The regulations prescribe the elements of a distribution integrity management program including:

- system knowledge;
- identification of integrity threats;
- evaluation and ranking of risks;
- identification and implementation of measures to address the risks;
- measurement of performance;
- periodic evaluation and improvement of the program; and
- reporting results.

There are other requirements as well, such as mandatory excess flow valve installations on new and replaced services lines to single family residences, enhanced reporting for mechanical fitting failures and provisions for adopting alternative inspection intervals to improve the overall safety of the distribution system. The core DIMP elements, however, reflect the elements of Southwest Gas' longstanding distribution pipeline integrity management and DPI processes.

Q. 13 Was Southwest Gas involved in the development of the federal DIMP regulations?

A. 13 Yes. Southwest Gas' extensive experience with its own form of distribution pipeline integrity management proved to be a valuable contribution to the efforts made by PHMSA and the gas industry in developing the requirements for the federal DIMP regulations. I served on the Distribution Infrastructure Government-Industry Team that oversaw the production of the American Gas Foundation report, *Safety Performance and Integrity of the Natural Gas Distribution Infrastructure*. I also served on the Risk Control Practices Group of the Distribution Integrity Management Quality Action Team sponsored by PHMSA. The responsibility of the team was to collect and analyze available distribution pipeline information and to reach findings and conclusions in order to inform PHMSA for future work relative to implementing integrity management principles for gas distribution pipelines. The work of this group culminated in a fundamental document for DIMP entitled, *Integrity Management for Gas Distribution, Report of Phase I Investigations ("DIMP Phase I Investigation")*. In addition, Marti Marek, Southwest Gas' Director, Engineering and Project Support Staff, served as chairman of the Gas Piping Technology Committee, which developed the guide material to assist operators to comply with the DIMP regulations. Furthermore, Jim Wunderlin, Southwest Gas' Senior Vice President, Engineering and Business Operations and Technology Support, served on the Technical Pipeline Safety Standards Committee, which is an advisory committee to PHMSA during the development of new regulations. All in all, Southwest Gas was very involved in the rulemaking process.

Q. 14 How does Southwest Gas' DPI process compare to the new DIMP regulations?

A. 14 The new DIMP regulations are broader than the DPI process and have more documentation and reporting requirements; however, the new regulations are based largely on the same core principles as Southwest Gas' DPI process. Southwest Gas is now refining its DPI policies and procedures to conform to the new DIMP regulations and expects to implement a formal plan compliant with the new DIMP regulations prior to August 2011.

Q. 15 Please explain how distribution pipe is prioritized and scheduled for replacement at Southwest Gas.

A. 15 First, unsafe pipe, regardless of age or pipe type, is replaced immediately in accordance with the Company's Operations Manual. Second, on an annual basis since 2000, Southwest Gas has evaluated and assessed its distribution pipe using the DPI process. From the DPI assessments, Southwest Gas determines a relative risk rank for various pipe segments. Pipe segments, including some EVPP, are identified and scheduled for replacement. Third, in addition to those segments of EVPP identified by the DPI process, Southwest Gas initiated a 20-year plan for the replacement of all EVPP based on general leak rates. Both the DPI process and the 20-year EVPP replacement plan are risk control practices designed to replace pipe before it becomes unsafe, and both are part of Southwest Gas' broader distribution pipeline integrity management program.

Q. 16 Please describe the Company's 20-year plan for the replacement of EVPP.

A. 16 The 20-year plan for the replacement of EVPP focuses on replacing the Company's plastic pipe that was installed from the late 1950's through the early 1980's. The program time frame for replacement is the 20 year period beginning in 2007 and ending in 2026.

Q. 17 What type of pipe does Southwest Gas consider to be EVPP?

A. 17 Southwest Gas characterizes the following pipe types as EVPP:

- ABS—Acrylonitrile Butadiene Styrene pipe;
- AA—Aldyl A pipe;
- AHD—Aldyl High Density pipe; and
- PVC—Polyvinyl Chloride pipe.

Q. 18 Why did Southwest Gas initiate its 20-year plan?

A. 18 Several key events occurred between 2005 and 2007 that ultimately resulted in the development of the 20-year plan. Although PHMSA had implemented integrity management requirements for hazardous liquid and gas transmission pipelines, no similar requirements existed for gas distribution pipelines and a number of industry observers suggested that such requirements were needed. Several multi-stakeholder work/study groups were established to collect and analyze available information and to reach findings and conclusions to inform future work by the PHMSA relative to implementing integrity management principles for gas distribution pipelines. The result of this work/study process was the publication of the *DIMP Phase I Investigation* in December 2005. This investigation concluded that it would be appropriate for PHMSA to modify its regulations to implement the concept of a risk-based distribution pipeline integrity management process. In 2006, Southwest Gas created a Manager position in Engineering Staff to establish a DIMP work group in preparation for the planned release of federal DIMP regulations that were mandated in the *Pipeline Inspection, Protection, Enforcement and Safety* ("*PIPES*") Act of 2006. One of the first tasks for this newly formed DIMP group was to evaluate all of Southwest Gas' plastic pipe and propose a long-range strategy for pipe replacement. This strategy was approved in February of 2007 and set in motion the 20-year plan for the replacement of EVPP.

Q. 19 What is Southwest Gas' overall strategy for pipe replacement under its 20-year plan?

A. 19 Southwest Gas' overall risk-based strategy is based on evaluating threats to the integrity of its pipeline system so that it can apply available resources to mitigate risk in a cost-effective and efficient manner. Since 1986, Southwest Gas has been monitoring leak rates of various distribution pipe types. While this leak analysis has provided performance measures for all types of pipe in the overall DPI process, it has provided the basis for the pipe replacement strategy for the 20-year plan to replace all EVPP. ABS pipe was a top priority pipe based on its historically poor performance. All of the ABS pipe has now been replaced. Considering all risk factors including leak rates AHD pipe has the highest replacement priority of the remaining EVPP. Both AA and PVC pipe will continue to be replaced as well, driven by DPI assessments. Once the AHD pipe replacement is completed, the AA and PVC pipe replacement will occur similar to the AHD replacement based on the relative risk of each of those pipe types at that time.

Q. 20 How much pipe has been replaced in Southwest Gas' Arizona service territory under the 20-year plan?

A. 20 Please refer to Company witness Robert A. Mashas' testimony for the amount of pipe that has been replaced consistent with the 20-year plan, specifically Exhibit No.__(RAM-5).

III. CUSTOMER-OWNED YARD LINES

Q. 21 What is Southwest Gas proposing in this case regarding customer-owned yard lines ("COYL")?

A. 21 In an effort to help customers manage their COYLs, Southwest Gas is proposing a pilot program to replace up to 5,000 COYLs in its Arizona service territory.

A. 22 What is a COYL?

A. 22 A COYL typically begins from a point of delivery connection at the outlet of the Company's meter at the property line or public right-of-way, and extends underground from the meter to the house, building or gas utilization equipment where gas is consumed. Since Southwest Gas does not own this piping, the customer is solely responsible for inspecting and maintaining that yard line.

Q. 23 Does the Company install facilities today that require COYLs?

A. 23 The Company does not install facilities today that require a COYL unless the customer restricts the Company's access to the property. The Company's long-standing construction practice is to select a meter location that is satisfactory to the Company. This location is generally found at the building or structure wall to avoid damage to the Company's facilities, eliminating the need for a COYL.

Q. 24 What is Southwest Gas' responsibility for COYLs?

A. 24 As reflected in Southwest Gas's Tariff, Rule No. 7, Southwest Gas has no obligation to inspect or maintain facilities beyond the point of delivery, including COYLs which are owned and operated by the customer. However, Southwest Gas is required by federal regulation (49 C F R §192.16) to notify a customer at least once in writing of the following information:

- Southwest Gas does not maintain the customer's buried piping;
- If the customer's piping is not maintained, it may be subject to the potential hazards of corrosion and leakage;
- Buried gas piping should be:

- Periodically inspected for leaks;
- Periodically inspected for corrosion if the piping is metallic; and
- Repaired if any unsafe condition is discovered.

- When excavating near buried gas piping, the piping should be located in advance, and the excavation done by hand; and
- Resources for locating, inspecting and repairing customer's buried piping.

Southwest Gas notifies new customers of the above information through a new customer brochure. Although it is only required to notify a customer once, Southwest Gas also reminds customers about COYLs once per month through the notice on the back of a bill or through Southwest Gas' website links (for electronic bills). In addition, Southwest Gas sent a first class bulletin/letter during 2009 and 2010 to approximately 108,000 customers in Arizona who are responsible for the operation and maintenance of their COYLs. Southwest Gas clearly exceeds all code requirements when it comes to keeping customers informed regarding their responsibilities associated with ownership and maintenance of a COYL.

Q. 25 Why is Southwest Gas proposing a pilot program to replace COYLs?

A. 25 Southwest Gas responds to all odor calls, and as information collection practices have improved over the past few years, the Company has noticed an upward trend in odor calls resulting from COYLs. In addition, the Company's public awareness programs and information collection practices indicate that many customers are not managing their aging COYLs. As a result, the Company is requesting that the Commission authorize approval of a pilot program to assist interested customers in managing their COYLs. Such a program would result in the replacement of the COYLs with a Southwest Gas owned and maintained service line extension.

Q. 26 Has Southwest Gas calculated an estimate of the costs to replace a COYL and relocate the meter next to the customer's residence – similar to current construction practices?

A. 26 Yes. Southwest Gas estimates that for a majority of the customers that have COYLs, the yard line can be replaced and the meter relocated without the need for major construction activity for approximately $2,000 per location. The estimate varies and is typically higher for customers that have significant exterior obstacles to work around such as foundations, pools, fences or extremely difficult terrain or landscaping.

Q. 27 What options do customers currently have when leaks are found on COYLs?

A. 27 Currently, the customers' options when leaks are found on COYLs include replacing the COYL with a Southwest Gas-owned facility and relocating the meter, calling a licensed plumber to replace or repair the COYL, or discontinuing gas service. Based on 2009 data, only 15% of customers who experienced leaks on COYLs elected to replace their COYL and relocate their meters. Approximately 70% of the customers who experienced leaks on COYLs contacted a licensed plumber who repaired the leak, leaving the meter and COYL in place. Less than 1% of the customers who experienced leaks on COYLs discontinued gas service. The data for the remaining customers who experienced leaks on COYLs was inconclusive.

Q. 28 Please explain the scope of Southwest Gas' proposal.

A. 28 Upon Commission approval of the pilot program, Southwest Gas proposes the following:

1) Establish a two-year pilot program for COYL replacements;
2) Establish a deferred account to allow Southwest Gas to recover, between rate cases, the incremental costs associated with the pilot program. The prepared direct testimony of Company witness Robert

A. Mashas describes in detail the Company's deferred accounting proposal for the pilot program;

3) Visually inspect selected COYLs;

4) Cap the total pilot program costs at either $10,000,000, the total estimated cost associated with completing the COYL replacement and meter relocation for 5,000 customers, or the total incremental cost associated with the pilot program incurred within two years, whichever occurs first.

Southwest Gas will review COYL accounts based upon the visual inspection results, and offer selected customers the opportunity to participate and to have their COYLs replaced and meters relocated according to the standard practice for all such services offered by Southwest Gas. Southwest Gas intends to re-evaluate these measures once the pilot program is complete before considering further actions that may apply to the balance of customers who own COYLs. Southwest Gas will report findings and recommendations to the Commission at the conclusion of the pilot program.

Q. 29 Does this conclude your testimony?

A. 29 Yes.

SUMMARY OF QUALIFICATIONS
JEROME T. SCHMITZ, P.E.

Jerome T. Schmitz is the director/Engineering Staff for Southwest Gas Corporation (Southwest). He directs and coordinates support to five operating divisions for pipeline safety code compliance; distribution integrity management; material specifications and approval; environmental compliance; proper energy measurement; pipeline cathodic protection; SCADA support; project design; and the training and qualification of technical services personnel.

Schmitz joined Southwest in 1989 as an engineer in Phoenix. He was subsequently promoted to distribution engineer in 1991; distribution engineer/Compliance and Operations Audit Staff in Engineering Staff later that year; supervisor/Engineering in the Central Arizona Division in 1993; manager/Operational Quality Assurance for Engineering Staff in 1998; and director/Gas Operations Support in 2003. He holds a bachelor of science degree in Genetics from the University of California, Davis, and a bachelor of science degree in Mechanical Engineering from Arizona State University. He is a registered Professional Engineer in the State of Arizona with a proficiency in Mechanical Engineering, and is certified as a Quality Auditor with the American Society for Quality. He also served on the Distribution Integrity Government Industry Team (DIGIT) that oversaw the production of the American Gas Foundation report, *Safety Performance and Integrity of the Natural Gas Distribution Infrastructure.* In addition, he served on the Risk Control Practices Group of the Distribution Integrity Management Quality Action Team sponsored by the Pipeline and Hazardous Materials Safety Administration (PHMSA). These groups were designed to collect and analyze available information and to reach findings and conclusions to inform future work by the PHMSA relative to implementing integrity management principles for gas distribution pipelines.

Schmitz currently serves as the chairman of the ASME B31Q Qualification of Pipeline Personnel Technical Committee. He also serves on the AGA Distribution and Transmission Engineering Committee as well as the Operations Safety Regulatory Action Committee.

EXHIBIT
A-9

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
Docket No. G-01551A-10

PREPARED DIRECT TESTIMONY
OF
ROBERT A. MASHAS

ON BEHALF OF
SOUTHWEST GAS CORPORATION

NOVEMBER 12, 2010

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of
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of
Robert A. Mashas

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Southwest Gas Corporation
Docket No. G-01551A-10-___

BEFORE THE ARIZONA CORPORATION COMMISSION

Prepared Direct Testimony
Of
ROBERT A. MASHAS

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Robert A. Mashas. My business address is 5241 Spring Mountain Road, Las Vegas, Nevada 89150.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or the Company) in the Revenue Requirements department. My title is Director/Revenue Requirements.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I previously testified before the Arizona Corporation Commission (Commission), the Public Utilities Commission of Nevada (PUCN), and the California Public Utilities Commission (CPUC). I have also provided written testimony to the Federal Energy Regulatory Commission (FERC).

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I provide a broad overview of the test year results and the major components driving the Company's deficiency. I also discuss the impact that the Company's current and previous four rate cases have had on residential margin per customer. In addition, I address the Company's proposals regarding its 20-year plan to replace its Early Vintage Plastic Pipe (EVPP) and sponsor Statement B, Rate Base along with the supporting schedules and workpapers.

Q. 6 Please summarize your prepared direct testimony.

A. 6 My direct testimony addresses the following key issues:

- An overview of the current proceeding, including test year results, the revenue deficiency, and the fair value rate of return (FVROR) requested by the Company.
- The major reasons and underlying causes driving the need for Southwest Gas to file its rate case application.
- Support from a rate making perspective for rate relief associated with the Company's 20-year plan for the replacement of EVPP.
- Support for the Company's request for a deferred accounting order in conjunction with the replacement of EVPP.
- Support for the Company's request for a deferred accounting order in conjunction with its proposal to implement a pilot program to assist customers in managing their aging facilities.
- Support for rate base inclusion of the remaining 50 percent of the cost to replace aging steel pipe first installed in the Yuma Manors subdivision in the mid-1950's.
- Support for the Company's main and service line extension policies set forth in its Arizona Tariff Rule No. 6 and the Incremental Contribution Method (ICM), which calculates the economic feasibility of new customer additions.
- Sponsor Southwest Gas' Schedule B, Rate Base and the workpapers that support the computation of the rate base required to provide

service to the Company's Arizona customers.

II. RATE CASE OVERVIEW

Q. 7 What is the test year for this rate application?

A. 7 The test year is the 12-month period ended June 30, 2010. The test year results were adjusted to normalize and annualize the effects of known and measurable changes that occurred through June 30, 2010 and certain known and measurable events that took effect after the test year.

Q. 8 How does the Company determine if a revenue deficiency exists?

A. 8 A revenue deficiency occurs when the Company's annualized and normalized revenue, at its current rates, is less than the Company's annualized and adjusted cost of service, including the cost of capital. If the resulting rate of return (ROR) is either less than that authorized in the Company's last rate case, or less than the ROR that would be deemed reasonable given current market conditions and the Company's overall cost of capital, a revenue deficiency exists.

Q. 9 What is Southwest Gas' current revenue deficiency in its Arizona operations?

A. 9 Schedule A-1, Sheet 2, Column (d) illustrates that the adjusted revenue of approximately $410.9 million at present rates yields a ROR of 6.06 percent. In this proceeding, Southwest Gas requests a FVROR of 7.50 percent on fair value rate base (FVRB). In order to produce the 7.50 percent FVROR, a revenue increase of approximately $73.2 million is required.

Q. 10 What does the term revenue refer to in the context of the Company's revenue deficiency?

A. 10 The term revenue refers to the non-gas revenues (or margin) Southwest Gas receives through base rates. Because there is a separate purchased gas adjustment mechanism to ensure that Southwest Gas' customers pay the actual cost incurred by the Company to purchase natural gas (i.e., Southwest

Gas earns no profit on the natural gas itself), revenues and costs associated with the gas commodity are excluded from the general rate case. Another term that is used interchangeably with revenue in this context is margin.

Q. 11 Does the Company propose any adjustments to the recorded test year amounts?

A. 11 Yes. There are 17 proposed adjustments (including four post-test year adjustments) to the test year data. These adjustments are listed on Schedule C-2, Sheets 1 through 2. Company witness A. Brooks Congdon supports Adjustment Nos. 1 and 2, Company witness Randi L. Aldridge supports Adjustment Nos. 3 through 17.

III. MAJOR REASONS AND UNDERLYING CAUSES DRIVING THE NEED FOR SOUTHWEST GAS TO FILE ITS RATE CASE

Q. 12 Please identify the major reasons and underlying causes driving the need for Southwest Gas' current revenue deficiency.

A. 12 The Company has identified three major factors that have driven the need to file this rate application: 1) declining residential use ($18.6 million); 2) declining general service customer use ($5.6 million); and 3) changes in the Company's cost of capital ($20.9 million). These three items comprise 62 percent of the total revenue deficiency in the present rate application. I discuss these three items in more detail later in my testimony.

Q. 13 What are some of the changes in expenses that have contributed to the Company's revenue deficiency?

A. 13 Some of the changes in expense contributing to the Company's revenue deficiency include: 1) depreciation expense ($12.9 million); and 2) pension expense ($7.0 million); These increases are partially offset by a $5.7 million property tax expense decrease.

Q. 14 Please identify any proposed adjustments that relate to events that have occurred, or will occur, after June 30, 2010.

A. 14 There are four proposed adjustments that fall into this category: 1) the 2011 wage increase and within-grade movement; 2) post test-year new and expired software amortizations; 3) the 2011 property tax assessment ratio – all of which are sponsored by Company witness Randi L. Aldridge; and 4) adjusting the test year-end recorded deferred federal income taxes as a result of the post test year enactment of bonus depreciation for tax year 2010 qualifying capital expenditures – which are addressed later in my direct testimony.

Q. 15 Why has Southwest Gas included these four post test-year adjustments in its application?

A. 15 Consistent with Southwest Gas' prior Arizona rate cases, the Commission has allowed adjustments similar to the four proposed in this proceeding when events are known or reasonably certain to occur and are measurable prior to hearing. By including these post test-year adjustments, the test year more accurately reflects the level of expenses and costs Southwest Gas will incur when rates approved in this proceeding go into effect. Furthermore, the four post test-year adjustments are easily reconcilable to test year accounts without distortion or mismatching.

The adjustments for post test-year wage increase and within grade movement, post test-year new and expiring amortizations, and post test-year property tax assessment ratio have been utilized in setting Southwest Gas' rates for at least the last three rate cases.

Q. 16 How much has the average annual residential bill for Southwest Gas' Arizona customers increased during the last 15 years?

A. 16 Exhibit No.__(RAM-1) shows that the 1996 and 2000 average annual residential bills were $361 and $380, respectively. By the 2007 rate case, the annual average bill increased to $605. Approximately 76 percent of this increase was due to the increase in gas costs. In this proceeding, if the Company's request is approved in its entirety, the average annual bill would be $576; $29 (or $2.42 per month) lower than 2007.

Q. 17 How does the proposed rate increase compare to the increase in the Consumer Price Index?

A. 17 Exhibit No. (RAM-2) shows that during the 16-year period since its 1996 rate case, which was based on a test year ending July 1995, Southwest Gas' residential margin rates have increased at an average annual rate of 2.37 percent, which is slightly less than the increase in the Consumer Price Index during this same time frame, assuming the current rate case is approved as filed. Indeed, the Company has held the residential cost per customer in line with inflation, which indicates that the Company is controlling its costs of providing service. The frequency of rate case filings, as well as the magnitude of the rate cases filed by the Company, have been greatly impacted by the continued decline in average residential use per customer.

A. Declining Average Residential Usage

Q. 18 How does declining average residential usage cause a revenue deficiency?

A. 18 At the time a rate case is filed, the Company proposes and ultimately the Commission establishes a cost of service that is deemed to be appropriate for the development of the rates that each customer class will be charged. In most instances, a fixed and variable rate is developed to recover the revenue responsibility allocated to each rate class. The portion of the designed revenue responsibility recovered through the fixed component is predicated on the number of customers requesting service. The portion of the revenue responsibility that is designed to be recovered through the variable component is predicated on volume of gas sold during the test year (or the average use per customer). Failure to sell the average use per customer will create a revenue deficiency that is not caused by an increase in the cost of service.

Q. 19 How does the Company determine the revenue deficiency component resulting from declining use per customer?

A. 19 The Company calculates this component of the deficiency by comparing the average use per customer utilized to establish its existing rates to the average use per customer experienced during the test year in the current rate case, times the authorized revenue usage rate. Only the number of customers that were included in the previous rate case is used in the calculation, thus excluding any change in customers since the last rate case.

Q. 20 Have you calculated the derivation of the residential margin authorized in the Company's last general rate case?

A. 20 Yes. Exhibit No.__(RAM-3) Sheet 1, shows the derivation of the residential margin authorized pursuant to the Company's last general rate case, which was based on annualized customers and normalized therms for the test year ending April 2007. Sheet 1, line 19 shows the 2007 rate case had 917,349 residential customers, with average use and margin per customer of 332 therms and $316.19, respectively.

Q. 21 Have you calculated margin at present rates in this rate case?

A. 21 Yes. Exhibit No.__(RAM-3) Sheet 2, shows residential margin at present rates, which is based on annualized customers and normalized therms for the test year ending June 2010. Sheet 2, line 19 shows the current rate case has 937,531 residential customers, with average use and margin per customer of 298 therms and $295.96, respectively.

Q. 22 Please compare the number of customers, therms and margin at present rates in the current rate case to levels used to develop rates in the

Company's previous rate case.

A. 22 When margin at present rates in this case is compared to the 2007 numbers, the average therms used per customer has decreased by 34 therms and the margin per customer has decreased by $20.24. Multiplying the $20.24 by the 917,349 customers from the 2007 rate case results in unrealized residential margin of approximately $18.6 million. Accordingly, if the Company did not add a single customer and did not incur additional costs above those previously authorized, the Company would still be deficient by $18.6 million. The $18.6 million represents approximately 25 percent of the Company's filed deficiency.

Q. 23 Is the margin lost due to declining average residential use per customer unique to this proceeding?

A. 23 No. The prepared direct testimony of Company witness Jamie Cattanach discusses the fact that declining residential use has occurred in every rate case since 1986. Exhibit No__(RAM-1) demonstrates the impact declining average residential use has had on the four rate cases filed since its 1996 rate case (Southwest Gas' first Arizona combined rate case). Exhibit No.__(RAM-1) Sheet 1, shows the actual normalized residential therms, fixed basic service charge and volumetric margin used to establish residential rates in the Company's four rate cases from 1996 through 2007. Sheet 1 also shows the proposed amounts in this proceeding.

The Company's 1996 rate case established rates based on average residential use of 409 therms and $257 of margin per customer. The Company's 2000 rate case established rates based on average residential use of 389 therms and $267 of margin per customer. Comparing the 1996 rate case to the 2000 rate case, the margin increased $10; however, when comparing to the margin at present rates, the increase was $18.50. The 20 therm decline from 1996 to 2000 (409 to 389) reduced the realized margin by $8.50 (20 therms X $0.4237). Approximately $8.50 or 46 percent of the $18.50 increase in the 2000 rate case was attributed to unrealized margin caused by declining average use per customer.

Following the same analysis, Sheet 1 further demonstrates that this phenomenon continued in the Company's next two rate cases and exists in the present rate case. The 2004 rate case resulted in a $48.46 increase at present rates, $18.46 or 38 percent of which can be attributed to declining average use per customer. The 2007 rate case resulted in a $26.88 increase at present rates, $7.88 or 29 percent of which can be attributed to declining average use per customer. In the present rate case, the Company is proposing an increase of $69.07 at present rates, $20.24 or 29 percent of which can be attributed to unrealized margin due to declining average use per customer.

Q. 24 Please explain Exhibit No.___(RAM-1) Sheet 2.

A. 24 Exhibit No.__(RAM-1) Sheet 2, converts the information contained on Sheet 1 into monthly amounts. The proposed average monthly residential bill, if the Company's request is accepted in its entirety, would be $48.04. During the 15-year time period shown on Exhibit No.__(RAM-1) Sheet 2, the average monthly residential bill will have increased by $17.96, or 60 percent. The gas cost portion represents 50 percent, or $9.91 of the increase. During the 15-year time period the margin portion (basic service and fixed cost collected through the commodity rate) would have increased by $9.04, or an average of $0.60 per year.

B. General Service Customers

Q. 25 What is the deficiency impact caused by the decline in the average use among general service customers?

A. 25 Exhibit No.___(RAM-4) Sheet 1, line 12 shows that in the Company's 2007 rate case, authorized margin for the Small, Medium and Large General Service rate schedules was $91,225,550, derived from 40,092 customers.

Exhibit No.___(RAM-4) sheet 2 shows that these three rate schedules in the current rate case have test year realized margin at present rates of $85,587,860; $5,637,690 less than what was previously authorized. Combined, these three rate schedules are using 17,228,603 less therms than the 2007 rate case. The $5,637,690 decrease in margin represents approximately 8 percent of the deficiency.

C. Cost of Capital

Q. 26 Does the Company's increase in its common equity ratio and its request for a higher return on common equity impact the deficiency?

A. 26 Yes. In this proceeding, the Company requests that the Commission establish rates resulting in a 7.50 percent overall rate of return on FVRB. The Company also requests that rates be established using a 52.30 percent common equity ratio (versus the 43.35 percent approved in the last rate case). In addition, the Company requests an increase in its cost of common equity capital from 10.00 percent to 11.00 percent to reflect current market conditions. The prepared direct testimony of Company witness Theodore Wood supports the requested 52.30 percent common equity ratio and the cost of debt. The prepared direct testimony of Company witness Robert Hevert supports the requested 11.0 percent cost of common equity. Mr. Hevert also supports the Company's FVROR. The combination of the above cost of capital proposals increases the Company's deficiency by approximately $20.9 million. The $20.9 million represents approximately 28 percent of the Company's filed deficiency.

IV. PIPE REPLACEMENT

Q. 27 What is Southwest Gas requesting with respect to its plan to replace?

A. 27 Southwest Gas requests specific rate treatment for pipe replacement that occurs consistent with its distribution integrity management program and its plan to replace EVPP. Company witness Jerome Schmitz sponsors testimony supporting the need for the plan to replace EVPP, and the Company's distribution integrity management program that is relied upon to identify the pipe to be replaced. I sponsor the Company's proposals concerning the specific rate treatment sought by the Company.

Q. 28 Please describe the Company's plan to replace EVPP in Arizona.

A. 28 Arizona's EVPP consists of all four pipe materials identified by Mr. Schmitz in his direct testimony – ABS, AHD, AA, and PVC. The history of Arizona EVPP replacement begins in the 1980's and early 1990's. During the 1980's, the ABS pipe originally installed by APS and acquired by Southwest Gas in 1984 required replacement. By 1990, approximately 95 percent of the ABS pipe was replaced. During the 1980's, it was also determined that the AA pipe originally installed by Tucson Gas & Electric (TG&E) and acquired by Southwest Gas required replacement. By the early 1990's, approximately 50 percent of this AA was replaced.

Q. 29 What has been the sequence of pipe replacement for the remaining EVPP in Arizona?

A. 29 Since most of the ABS pipe was replaced prior to the development of the plan to replace EVPP, the Company is left with three EVPP materials (AHD, AA and PVC). As discussed in more detail by Company witness Schmitz, the first pipe to be replaced is AHD, followed by the replacement of AA and PVC pipe based on the leak rate evaluations for those pipe types at that time. Regardless of the pipe material being replaced, approximately 5 percent of Arizona's EVPP will be replaced each year until 2026.

Q. 30 What has been the Commission's regulatory treatment of these replacement expenditures?

A. 30 With regard to the ABS and AA pipe replacement programs, the Commission found in Decision Nos. 57075 and 57745 that a cost sharing between customers and shareholders was appropriate. This cost sharing resulted in millions of dollars of replacement pipe expenditures being permanently written off on the Company's books, and never recovered from customers.

Q. 31 Please describe the Commission's regulatory treatment of replacement expenditures for the remaining pipe types.

A. 31 The AHD pipe material was the focus of Commission attention in rate proceedings occurring during the 1990's, resulting in a pre-determined percent of future AHD replacement expenditures being written-off. The AHD pipe write-off percentage was more aggressive than the percentage established for AA and ABS since those two pipe materials were installed by utilities other than Southwest Gas, while the AHD was installed by Southwest Gas.

During its 2004 Arizona rate case Southwest Gas requested that the Commission reconsider the write-off percentages established in earlier rate cases. In Decision No. 68487, the Commission agreed to modify the write-off percentage using the 40-year useful life criteria. The 40-year criteria results in a 2010 write-off of 25 percent for AHD. The write-off percent is designed to decrease by 2.5 percent per year until 2020. The 2010 write-off percent is 3.25 percent, and is designed to decrease by 1.25 percent per year until 2013.

Q. 32 Please briefly describe how much pipe has been replaced pursuant to the Company's plan to replace EVPP.

A. 32 Exhibit No.__(RAM-5) characterizes the 18.1 million feet of EVPP still in the ground in December 2006 by location (state), pipe type and the company that installed it. Approximately 54 percent of the pipe was installed in Arizona. During the 45-month period extending from January 2007 through September 2010, 16.7 percent of Arizona EVPP was replaced. Nevada's operations have replaced a nearly identical 16.6 percent, while the California operations replaced 33.3 percent, nearly twice as much on a percentage basis as Arizona and Nevada. In total, Southwest Gas has replaced approximately 19.3 percent of its EVPP after three years and nine months of a 20-year plan. After four full years under the plan, the Company should be at the 20 percent mark, or five percent per year, on average.

Q. 33 Please explain why California has replaced nearly twice as much EVPP on their system as either Arizona or Nevada.

A. 33 Southwest Gas was directed by the CPUC in D.04-03-034 to replace all California PVC pipe over a ratable period of time that will result in all of California's PVC being replaced by 2020; 6 years earlier than the anticipated expiration of the Company's 20-year plan to replace EVPP. As a result, the Company's California's operations are on a faster pace for EVPP replacement than its Nevada and Arizona operations.

Q. 34 Please explain the CPUC's regulatory treatment of the replacement expenditures.

A. 34 During the late 1990's through the early 2000's the Company determined through its Pipeline Integrity Assessment (PIA) or Distribution Pipeline Integrity (DPI) process that the PVC pipe in colder weather climates, especially the gas line services, required replacement. Company witness Schmitz describes DPI process in his prepared direct testimony. Furthermore, California rate making is based on a future test year, and the CPUC has its utilities on a rate case cycle. That cycle had the Company filing and processing a rate case during 2001/2002, with new rates being implemented in January 2003. During that rate case, the Company requested recovery of the replacement expenditures required to replace the PVC through the end of 2003, as well as annual adjustments to base rates to recover ongoing replacement expenditures planned for the following four-year period. The CPUC in D.04-03-034 found that Southwest Gas' accelerated PVC pipe replacement program was reasonable. In Section 7.3 of D.04-03-034 the CPUC stated:

> In other proceedings, we are often asked to encourage utilities to maintain, repair or replace existing plant. In the instant proceeding, it is not a matter of encouraging or directing Southwest to maintain its system or whether the aging PVC must be replaced.

The CPUC went on to state:

> In weighting [sic] the testimony and evidence presented by parties, and potential safety concerns, we conclude that an accelerated replacement program for Southwest's PVC mains and services is reasonable ... Although Southwest is under no regulatory requirement to replace its PVC pipe, it undertook a reasonable approach to potential problems and safety issues through initiating the PIA. The PIA is an example of the prudent analysis that we expect from utilities under our authority.

Finally, the CPUC stated:

> ...we expect that Southwest will proceed to replace PVC at an equal rate for the next 15 years.

Q. 35 Please comment on Southwest Gas' Northern Nevada PVC pipe experience.

A. 35 The Nevada Regulatory Operations Staff of the PUCN has encouraged Southwest Gas to replace PVC pipe, and to the extent replacement expenditures have been included in rate base, the Company has recovered the associated cost of replacement. In addition, like Northern California, all Northern Nevada PVC services were replaced during the same time frame due to the concern that extreme cold weather conditions might be having a negative impact on the PVC services. Southwest Gas' Northern Nevada service territory experiences similar extreme cold weather conditions to that of North Lake Tahoe and Big Bear, California. These weather conditions are not present in the Company's Southern Nevada and Arizona service territories.

Q. 36 Please quantify the dollar impact that cost sharing has had on the replacement of certain EVPP materials in Arizona.

A. 36 Two of the EVPP materials (AHD and AA) carry a legacy pipe write-off practice emanating from Commission decisions from nearly twenty years ago. Southwest Gas has written-off $8,176,962, or approximately 27 percent, of the $29,898,711 spent to replace AHD pipe from 2007 through June 2010. The Company has also written-off $274,000, or approximately 5.5 percent, of the $5,002,307 spent to replace AA. Since the write-off percent for AA goes to zero in 2013, and given the priority of its replacement, the directives from prior Commission decisions regarding AA will have a very small future impact on the Company.

Q. 37 What options does the Company have regarding AHD pipe replacement, and how are each of those options impacted by the AHD write-off requirements?

A. 37 Exhibit No.__(RAM-6) Sheet 1, lists the dollar write-offs that would result given four different AHD replacement time periods.

(1) The first option results in zero write-offs, provided that the Company delays replacing AHD until 2020 when the write-off percent reaches zero. This option directly conflicts with the Company's DPI process and its plan to replace EVPP.

(2) The second option is to ratably replace AHD (5 percent annually) over the 20-year period from 2007-2026. This results in a $7.7 million

write-off. Again, this option directly conflicts with the Company's DPI process and its plan to replace EVPP.

(3) The third option, similar to the Company's practices in California, is DPI based replacement through the test year ending June 2010 and then ratable replacement through 2020. This would result in all Arizona AHD pipe being replaced in the same year that California's PVC replacement program ends. This would result in a total write-off of approximately $12.6 million and is not entirely consistent with the Company's plan to replace EVPP.

(4) The fourth option reflects the replacement schedule that is currently being implemented by Southwest Gas. It relies on the DPI process as the sole criteria for replacement rather than the minimization of pipe write-offs. Unfortunately, given the Commission's current write-off requirements for AHD pipe, this option, which replaces the AHD pipe in the timeliest manner, also results in the highest write-off amount (approximately $16.0 million).

Q. 38 What is the Company's proposed resolution to the financial disincentive it faces by relying on the DPI and its plan to replace EVPP to determine the order of replacement?

A. 38 The Company is not requesting the Commission's prior decision concerning AHD write-off be changed retroactively, and understands that AHD replacement from 2007 through the end of the test year has resulted in an unavoidable $8,177,678 write-off. However, the Company does request that the Commission consider the fact that the $8,177,678 written-off at the end of the current test year is larger than the $7,709,780 that would be written-off if a 20-year ratable replacement was undertaken through the Company-wide plan to replace EVPP (or option 2 discussed above). The Company is therefore asking the Commission to reconsider the write-off requirements for AHD pipe replacement by permitting Southwest Gas to discontinue the write-offs beginning with the end of the test year in this proceeding, and finding that the $8,177,678 that has already been written-off should be permanently removed from rate base, representing a reasonable sharing of these replacement costs between shareholders and customers.

Q. 39 Please explain why this is a reasonable option for the Commission to consider.

A. 39 One of the reasons underlying the Commission' decision to write-off a portion of pipe replacement expenditures was that pipe was being replaced prematurely (in some instances very prematurely) and these replacement expenditures were placing a cost burden on customers. The Commission in Decision No. 57075, stated, ". . . the principles of fairness and equity militate [sic] against imposing upon the Central Arizona customers sole and full cost responsibility for the massive system-wide effort required to replace the defective ABS pipe before the end of its expected useful [sic] life." The Commission determined that because the pipe was being replaced well before the end of its useful life, the customers should not bear the entire cost of replacement.

Q. 40 Does the Commission's rationale from Decision No. 57075 still apply today?

A. 40 No. The pipe has continued to age in the 20 years since the Commission first considered the issue, and its removal would no longer be considered premature. Regardless of which pipe is replaced, replacement costs will be incurred consistent with the plan to replace EVPP to replace approximately 5 percent of the EVPP; it is only a matter of which pipe material is replaced first. Therefore, the emphasis is no longer centered on avoiding replacement expenditures, but prioritizing them. The current pipe write-off schedule is therefore no longer appropriate and, as discussed above, provides a disincentive for replacing pipe pursuant to the DPI process.

V. EVPP DEFERRED ACCOUNTING ORDER

Q. 41 Please explain the Company's proposal to defer the costs associated with the replacement of AHD pipe as part of its plan to replace EVPP.

A. 41 The replacement of all AHD pipe is expected to be complete by mid-year 2013. Accordingly, the Company is requesting approval of a deferred accounting order to defer depreciation expense, carrying costs, and property taxes resulting from removing the remainder of AHD pipe through mid-year 2013.

The Company's proposal is to defer the depreciation expense taken on replacement expenditures closed to plant in-service beginning July 1, 2010, and the deferred accounting order would only apply to depreciation expense not included in rates following this proceeding. With respect to carrying charges, the deferral would begin with the effective date of new rates, and only apply to replacement dollars not included in rates following this proceeding. The Company is also requesting that the property taxes associated with the replacement expenditures that are subject to the deferred accounting order also be included in the deferral. At the time of the Company's next general rate case, it will include as part of its filing a proposed amortization of these costs over a period of time the Commission deems appropriate.

Q. 42 Why does the Company believe a deferred accounting order is appropriate?

A. 42 The capital expenditures required to replace the AHD, as part of its plan to replace EVPP, are non-revenue producing. The carrying costs, depreciation and property taxes associated with these replacement costs contribute to the Company's inability to earn its Commission authorized ROR, which in turn has a negative impact on the Company's credit ratings and ultimately impacts the terms the Company is able to receive when refinancing and issuing debt.

The deferral of depreciation expense is justified for another reason. Depreciation expense is accumulated in Account 108, Accumulated Provision for Depreciation, which in turn is a permanent offset to rate base. The Company does not earn a return on amounts included in Account 108 under the presumption that the customer has provided the funds accumulated in this account. This deferred depreciation represents amounts that the customer did not provide in this rate case, or any other rate case, unless the deferral and subsequent recovery is authorized by the Commission. Therefore, without the deferral it would be unfair to use the depreciation expense accumulated in Account 108, as a rate base offset unless these amounts are ultimately recovered from the customer.

Q. 43 Has the Commission ever approved the deferral of similar EVPP replacement cost?

A. 43 Yes. In Decision No. 57075, Docket No. U-1551-89-103, the Commission concluded on page 92 item 14: "Until the allowable portion of the costs is ultimately determined by the Commission and reflected in rates, Southwest should capitalize in a deferred asset account all interest costs, taxes, and depreciation expense incurred on the Southern division pipe replacement program, with the interest costs to be accrued at the weighted average interest rate of 10.99% which is equal to the approved cost of debt for the Southern division in these proceedings."

VI. CUSTOMER OWNED YARD LINES (COYL)

Q. 44 Please describe the Company's request related to COYL.

A. 44 The Company requests that the Commission authorize the deferral of carrying costs, depreciation, property taxes and incremental expenses related to the proposed installation of Southwest Gas facilities to replace COYL. The prepared direct testimony of Company witness Schmitz supports the COYL pilot program.

Q. 45 What ratemaking treatment is Southwest Gas requesting for its proposed COYL pilot program?

A. 45 It is customary that when a Southwest Gas facility has reached the end of its useful life it is replaced and the cost of the replacement is included in rates. The difference with the replacement of COYLs is that the original cost of these facilities was borne by the customers individually and not by the general body of ratepayers. As explained in further detail in Company witness Schmitz's testimony, the Company believes that it can assist customers in managing their COYLs by initiating a pilot program to begin replacing the COYL with a Southwest Gas owned and maintained service line extension.

Q. 46 Why does the Company believe that the deferral of these costs is appropriate?

A. 46 The pilot program would not be appropriate for a post test year adjustment since it has not yet been approved by the Commission and a relatively small amount of dollars would be spent by year-end 2011. In this instance, the deferral of costs is therefore more appropriate than a post test-year adjustment.

Furthermore, the deferral of COYL program costs would remove the financial impact on the Company's income statement. Like all other pipe replacement, COYL replacement costs are non-revenue producing and absent deferral, there is nothing to offset these costs between rate cases.

Q. 47 Would it be appropriate to charge the general body of customers for these costs in future rates?

A. 47 Yes. For decades COYL customers have been paying Southwest Gas' rates, which include the cost of service extensions for all other customers; both the original cost and the cost of any subsequent replacements. Southwest Gas believes it would be equitable to allocate both the cost of the COYL replacement service and the related deferred cost amongst all customers in future rates.

VII. YUMA MANORS

Q. 48 Has the Company included in this application the cost of replacing the aging 1950's steel pipe in the Yuma Manors subdivision in Yuma Arizona?

A. 48 Yes. In Decision No. 70665, the Commission removed from rate base a portion of the cost of replacing the original steel pipe installed in the Yuma Manors subdivision in the 1950's. The Commission removed $546,224, of which $320,779 was written-off and permanently removed from rate base. The Commission stated that the Company could request that the remaining $225,445 be included in rate base in the Company's next rate case. Thus, the Company has included the remaining $225,445 in its rate base for this proceeding.

VIII. INCREMENTAL CONTRIBUTION METHOD (ICM)

Q. 49 Did the Commission direct the Company to provide an explanation, including sample ICM calculations, of how it has been implementing its Rule 6 Tariff provisions?

A. 49 Yes. The Company's Arizona Tariff Rule No. 6, Service and Main Extensions, has been addressed in one form or the other in the Company's previous three rate cases (test years 1999, 2004 and 2007). In Southwest Gas' last rate case (Decision No. 70665), the Commission directed the Company in its next rate case to provide an explanation of its Rule No. 6 policy along with sample calculations of its ICM model.

Q. 50 What is the general policy set forth in Rule No. 6, Service and Main Extensions?

A. 50 The Company's Tariff Rule No. 6, B.1. states, "General Policy – All service and main extensions are made on the basis of economic feasibility ... The economic feasibility will be calculated by the Incremental Contribution Method as described in section B.4 hereof." Section B. 4 states, "Incremental Contribution Method - Gas service and main line extensions will be made by the Utility at its own expense for the allowable investment as calculated by an Incremental Contribution Study." Section 4 Paragraph A states, " Allowable investment shall mean a determination by the Utility that revenues less the incremental cost to serve the applicant customer provides a rate of return on the Utility's investment no less than the overall rate of return authorized by the Commission in the Utility's most recent general rate case."

Q. 51 What is the goal of the Company's ICM analysis?

A. 51 The goal of the ICM is to ensure that service to new customers can be provided with incremental investment and expenses that are supported by the expected incremental margin from such new customers. The incremental cost of providing service to new customers should not place a burden on existing customers, or the shareholders, who provided the capital to serve these customers.

Q. 52 Please explain the key aspects of the ICM model.

A. 52 Exhibit No.__(RAM-7) consists of 23 sheets comprising the ICM model output. Sheets 1 through 3 provide the guidelines and key aspects of the workings of the model. Sheet 4 is the cost input sheet and the single family home (SFH) and multi-family home (MFH) residential customer appliance input sheet. Sheets 5 and 6 are the commercial customer gas appliance and equipment input sheets. Sheet 7 provides for the input of the customer build out. Sheet 8 is the investment cost summary output sheet, while Sheets 9 through 12 are the detail cost output sheets by year. Sheet 13 shows the yearly results of operations for the project for the first six years. Sheet 14 shows the residential margin calculation at full build out, while Sheet 15 shows the commercial customer calculation by year of build out. Sheet 16 is a key input sheet that is only updated after receiving a Commission-authorized rate order.

Q. 53 Do any of the inputs get changed?

A. 53 Yes. Inputs that may change after receiving a new rate order include the components of the cost of capital, state and federal income tax rates, property tax rates, book depreciation rates and the uncollectible rates that are embedded in the new tariff rates authorized by the Commission. Sheet 17 of Exhibit No.__(RAM-7) shows the authorized commodity rate for residential single and multi-family residential and small, medium and large general service customers. Also shown is the standard service stub and extension footage per customer and cost per foot. This information is shown for Southwest Gas' nine Arizona districts. Redacted on this sheet is the therm use for the heating, water heating, cooking, clothes drying and gas logs that are used to determine the new margin for each project. The Company considers this information to be proprietary, commercially sensitive, and confidential. Sheets 18 through 20 contain the ICM glossary of terms and Sheets 21 through 23 contain the release notes documenting changes to the ICM during approximately the last four years.

Q. 54 How often are the residential customer appliance end-use studies reviewed and updated?

A. 54 The residential end-use appliance studies are updated annually.

Q. 55 Has there been a significant change in Southwest Gas' residential customer growth in Arizona since its last rate case?

A. 55 Yes. During the 12-year period 1996 through 2007 in Arizona, the Company set an average of approximately 3,000 new meters per month. During the three years preceding the Company's last rate case (2004-2007) it set nearly 4,000 meters per month. From January 2008 through June 2010 the Company averaged less than 1,100 new meter sets per month and since January 2009, there have been only 2 months where the Company set more than 1,000 meters. Customer growth has declined by nearly 75 percent over the last two and a half years and has declined even further over the last 20 months.

Q. 56 Will the Company provide to the Staff, RUCO and other interested parties examples of ICM analysis of actual projects?

A. 56 Yes. The Company will provide examples of actual projects to Staff, RUCO, and other interested parties once the appropriate confidentiality agreements are executed.

IX. RATE BASE

Q. 57 What is the fair value and original cost rate base that Southwest Gas requests in its rate application?

A. 57 Southwest Gas proposes and supports a FVRB of $1,456,517,467. The FVRB was determined by giving equal weight (50/50) to the original cost rate base of $1,073,700,633 and the reconstruction cost new rate base of $1,839,334,300. Schedule B-1 is a high-level summary of the various components that comprise rate base. Rate base is presented on this schedule at original cost, reconstruction cost new, and at fair value. All measurements were performed at, or for, the thirteen months ended June 30, 2010. Details of the various rate base components can be found in Schedules B-2 through B-6.

Q. 58 Is the Company proposing any adjustments to the recorded rate base amounts at June 2010?

A. 58 Yes. Adjustment No. 17, Completed Construction Not Classified (CCNC), adds to rate base the recorded amounts as of June 2010 of non-revenue producing CCNC that resides in construction work-in-progress, along with an adjustment to System Allocable Miscellaneous Intangible Plant (to synchronize the plant with the adjustment to System Allocable amortization expense in Adjustment No. 13). This consists of two components: a direct Arizona component of $2,806,169 and a System Allocable component (after 4-Factor) of $3,284,398. Company witness Randi L. Aldridge discusses Adjustment Nos. 13 and 17 in her prepared direct testimony.

Q. 59 Please describe and explain Southwest Gas' Schedules B-3 and B-4.

A. 59 Schedule B-3 is a summary of the reconstruction cost new study. The schedule contains both the direct and system allocable plant assigned to Arizona. The reconstruction cost new data is utilized to develop the FVRB. The detail supporting Schedule B-3 is contained in Schedule B-4 which contains the Handy-Whitman indices that were used to trend original cost plant to obtain the reconstruction cost new data, and the reconstruction cost new data by vintage year, by FERC account.

Q. 60 Please describe and explain the other rate base items contained in Southwest Gas' Schedule B-5 and B-6 that do not use the end of test year balance.

A. 60 Schedules B-5 and B-6 contain four items that employ the 13-month average balance method for inclusion in rate base: 1) materials and supplies; 2) prepayments; 3) customer advances for construction; and 4) customer deposits. The use of the 13-month average balance as the method of calculation has been used and accepted by this Commission in many past rate cases.

Q. 61 Please describe and explain the items contained in Schedule B-5 and B-6 that do not employ the 13-month average balance method.

A. 61 The cash working capital allowance and the accumulated balance of deferred income taxes do not use the 13-month average balance method of calculation.

The cash working capital allowance is determined through a comprehensive lead-lag study. In performing the lead-lag study, Southwest Gas examined every non-gas invoice over $10,000 processed during the test year. The Company also examined every gas invoice processed during the test year regardless of the expense level. As a result, approximately 80 percent of total adjusted operating expenses were reviewed to determine the net lag attributable to operating expenses.

The June 2010 balance of accumulated deferred income taxes, adjusted for the post test-year enactment of bonus tax depreciation, for year 2010 capital expenditures is in rate base. The Commission has accepted the end of test year balance, rather than the 13-month average balance, in many past rate cases.

Q. 62 Does this conclude your prepared direct testimony?

A. 62 Yes.

SUMMARY OF QUALIFICATIONS
ROBERT A. MASHAS

I graduated from Wilkes College in Wilkes-Barre, Pennsylvania with a Bachelor of Science degree in Management, with an Economics concentration. I received a Master of Business Administration degree from Shippensburg State College in Shippensburg, Pennsylvania. I am a member of the American Institute of Certified Public Accountants.

Prior to joining Southwest in 1984, I held a positions as a staff accountant (one year) with Marriott Corporation, auditor (five years) with the Federal Energy Regulatory Commission (FERC) Office of Chief Accountant, and as a senior auditor (one year) Public Service Commission of Nevada (PSCN) now known as the Public Utilities Commission of Nevada (PUCN). My responsibilities at the FERC included conducting audits of natural gas transmission, electric and oil pipeline companies for compliance with the Uniform System of Accounts, rate orders and decisions of the FERC. My responsibilities at the PSCN included the examination of the books and records of gas, electric, and water utilities, as well as testifying as an expert witness.

I joined the Rate Department of Southwest, in 1984, as a cost analysis. In 1985, I was promoted to Manager/Revenue Requirements. In 1992, I was promoted to Director, Revenue Requirements and Resource Planning, and in 1998, with the regulatory requirements for resource planning reduced, my focus was primarily revenue requirements. During my more than twenty years overseeing the Revenue Requirements Department, I have either directly or indirectly prepared and participated, as an expert witness, in every Southwest Gas and Paiute Pipeline general rate case since 1986. I have also represented the Company in numerous dockets that addressed accounting and regulatory issues.

SOUTHWEST GAS CORPORATION
ARIZONA
RESIDENTIAL GAS SERVICE RATE- SCHEDULE CG-5 MONTHLY BILL COMPARISON
DOCKET NUMBERS 96-596, 00-309, 04-0876, 07-0504, 10-11XX
NOMINAL DOLLARS

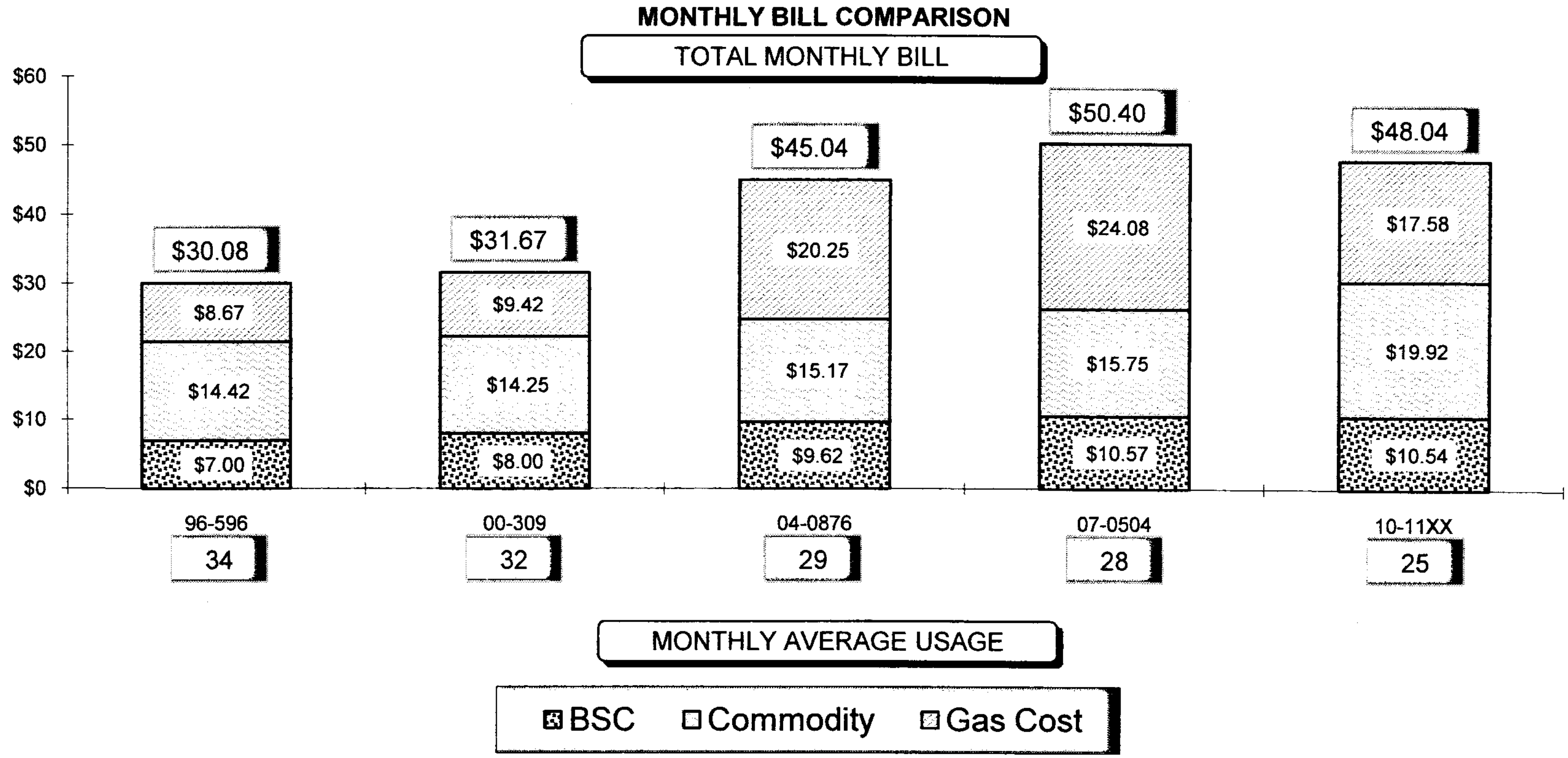
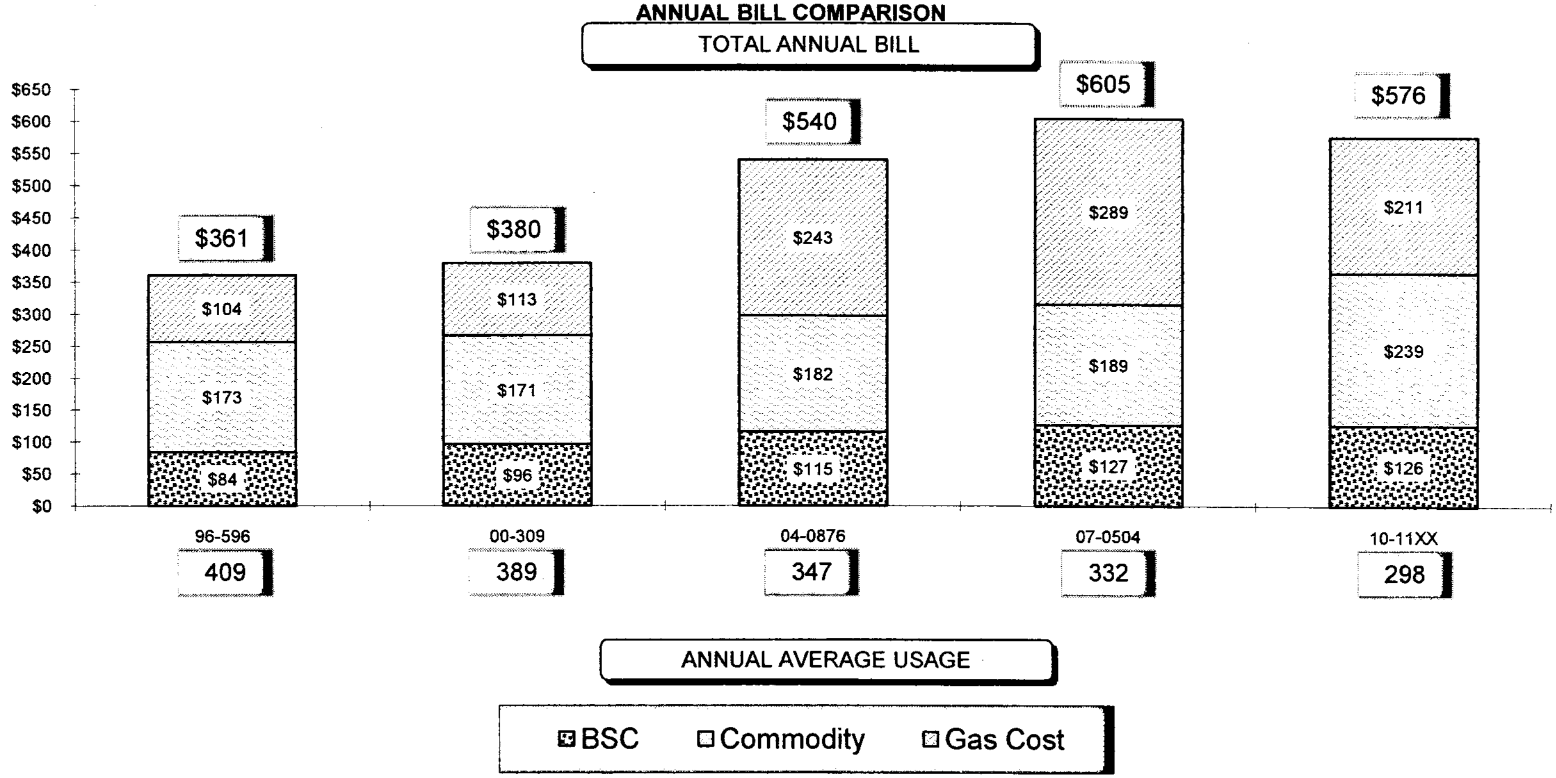


Exhibit No.___ (RAM-1)
SHEET 1 OF 2

SOUTHWEST GAS CORPORATION
ARIZONA
RESIDENTIAL GAS SERVICE RATE- SCHEDULE CG-5 ANNUAL BILL COMPARISON
DOCKET NUMBERS 96-596, 00-309, 04-0876, 07-0504, 10-11XX
NOMINAL DOLLARS

Docket No. U-1551-	Effective Date	Tariff Rate Volumetric	Tariff Rate Gas Cost	Tariff Rate Total	Annual Avg Usage	Margin Volumetric	Margin BSC	Margin Total	Gas Cost	Total
96-596	9/1/97	$ 0.42370	$ 0.25489	$ 0.67859	409	$ 173	$ 84	$ 257	$ 104	$ 361
00-309	4/1/01	0.43960	0.28930	0.72890	389	171	96	267	113	380
04-0876	3/1/06	0.52579	0.69994	1.22573	347	182	115	297	243	540
07-0504	12/1/08	0.56975	0.87029	1.44004	332	189	127	316	289	605
10-11XX	XX/X/XX	0.80173	0.70873	1.51046	298	239	126	365	211	576

ANNUAL BILL COMPARISON



SOUTHWEST GAS CORPORATION
ARIZONA
AVERAGE ANNUAL RESIDENTIAL MARGIN PER CUSTOMER
RATE CASES APPROVED FOR YEARS 1996 THROUGH 2008 AND REQUESTED 2010
COMPARISON OF THE AVERAGE ANNUAL RATE OF INCREASE TO THE CONSUMER PRICE INDEX

					Required Margin Increase at 2.37 Percent Annually				
Year	Docket Number G-1551A	Test Year End	Effective Date	Effective Year	Begin	Average Percent Growth	End	Average Increase Annual	Average Increase Monthly
1995							$ 257		
1996					$ 257	1.0237	263	$ 6.08	$ 0.51
1997	96-596	Jul-95	Sep-97	$ 257	263	1.0237	269	6.23	0.52
1998					269	1.0237	276	6.37	0.53
1999					276	1.0237	282	6.52	0.54
2000					282	1.0237	289	6.68	0.56
2001	00-0309	Dec-99	Nov-01	274	289	1.0237	296	6.84	0.57
2002					296	1.0237	303	7.00	0.58
2003					303	1.0237	310	7.16	0.60
2004					310	1.0237	317	7.33	0.61
2005					317	1.0237	325	7.51	0.63
2006	04-0876	Aug-04	Mar-06	297	325	1.0237	332	7.68	0.64
2007					332	1.0237	340	7.87	0.66
2008	07-0504	Apr-07	Dec-08	316	340	1.0237	348	8.05	0.67
2009					348	1.0237	357	8.24	0.69
2010					357	1.0237	365	8.44	0.70
2011	10-11XX	Jun-10		365	365	1.0237	374	8.64	0.72

Total Dollar Increase over 16 Years	$ 108
Total 15-Year (Jan 1996 - Jan 2011) Percent Increase	42.0%
Average Annual	2.37%
CPI at Dec 1995	153.5
CPI at June 2010	218.0
Change over 14.5 years	64.5
Total 14.5-Year (Jan 1996 - Jun 2010) Increase	42.00%
Average Annual Inflation Rate	2.45%

SOUTHWEST GAS CORPORATION
ARIZONA
AUTHORIZED 2007 RATE CASE
TEST YEAR ENDED APRIL 2007

Line No.	Description (a)	Rate Sch. (b)	Bills (c)	Therms (d)	Rate (e)	BSC (f)	Commodity (g)	Total (h)	Line No.
1	SFH Res.	G-5	10,298,030		$ 10.70	$ 110,188,921	$	$ 110,188,921	1
2				289,056,115	$ 0.57070		164,964,325	164,964,325	2
3	Total		858,169	337		$ 110,188,921	$ 164,964,325	$ 275,153,246	3
4	MFH-Family Res.	G-6	370,562		$ 9.70	$ 3,594,451	$	$ 3,594,451	4
5				6,508,059	$ 0.55343		3,601,755	3,601,755	5
6	Total		30,880	211		$ 3,594,451	$ 3,601,755	$ 7,196,206	6
7	SFH-Low Income Res.	G-10	310,906		$ 7.50	$ 2,331,795	$	$ 2,331,795	7
8				8,658,972	$ 0.55343		4,792,135	4,792,135	8
9	Total		25,909	334		$ 2,331,795	$ 4,792,135	$ 7,123,930	9
10	MFH-Low Income Res.	G-11	27,388		$ 7.50	$ 205,410	$	$ 205,410	10
11				552,643	$ 0.55343		305,849	305,849	11
12	Total		2,282	242		$ 205,410	$ 305,849	$ 511,259	12
13	Special Res.	G-15	1,296		$ 10.70	$ 13,867	$	$ 13,867	13
14				141,520	$ 0.44048		62,337	62,337	14
15	Total		108	1,310		$ 13,867	$ 62,337	$ 76,204	15
16	Fixed					$ 116,334,445	$ 0	$ 116,334,445	16
17	Variable					0	173,726,401	173,726,401	17
18	Total Residential		11,008,182	304,917,309		$ 116,334,445	$ 173,726,401	$ 290,060,846	18
19	Average Customers, Therms & Margin		917,349	332				$ 316.19	19

SOUTHWEST GAS CORPORATION
ARIZONA
AUTHORIZED 2007 TO PRESENT RATES JUNE 2010
TEST YEAR ENDED JUNE 2010
LOST MARGIN DUE TO DECLINING AVERAGE USE

Line No.	Description	Rate Sch.	Bills	Therms	Rate	BSC	Commodity	Margin 2010 Total	Margin 2007 Total	Margin 2010 vs 2007	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	
1	SFH Res.	G-5	10,418,131		$ 10.70	$ 111,474,002	$	$ 111,474,002	$ 110,188,921	$ 1,285,081	1
2				261,822,441	$ 0.57070		149,422,067	149,422,067	164,964,325	(15,542,258)	2
3	Total		868,178	302		$ 111,474,002	$ 149,422,067	$ 260,896,069	$ 275,153,246	$ (14,257,177)	3
4	MFH-Family Res.	G-6	378,334		$ 9.70	$ 3,669,840	$	$ 3,669,840	$ 3,594,451	$ 75,388	4
5				5,862,713	$ 0.55343		3,244,601	3,244,601	3,601,755	(357,154)	5
6	Total		31,528	186		$ 3,669,840	$ 3,244,601	$ 6,914,441	$ 7,196,206	$ (281,765)	6
7	SFH-Low Income Res.	G-10	415,096		$ 7.50	$ 3,113,220	$	$ 3,113,220	$ 2,331,795	$ 781,425	7
8				10,495,198	$ 0.55343		5,808,357	5,808,357	4,792,135	1,016,223	8
9	Total		34,591	303		$ 3,113,220	$ 5,808,357	$ 8,921,577	$ 7,123,930	$ 1,797,648	9
10	MFH-Low Income Res.	G-11	37,729		$ 7.50	$ 282,968	$	$ 282,968	$ 205,410	$ 77,558	10
11				710,445	$ 0.55343		393,182	393,182	305,849	87,332	11
12	Total		3,144	226		$ 282,968	$ 393,182	$ 676,149	$ 511,259	$ 164,890	12
13	Special Res.	G-15	1,080		$ 10.70	$ 11,556	$	$ 11,556	$ 13,867	$ (2,311)	13
14				89,219	$ 0.52978		47,266	47,266	62,337	(15,071)	14
15	Total		90	991		$ 11,556	$ 47,266	$ 58,822	$ 76,204	$ (17,382)	15
16	Fixed					$ 118,551,585	$ 0	$ 118,551,585	$ 116,334,445	$ 2,217,140	16
17	Variable					0	158,915,473	158,915,473	173,726,401	(14,810,928)	17
18	Total Residential		11,250,370	278,980,016		$ 118,551,585	$ 158,915,473	$ 277,467,058	$ 290,060,846	$ (12,593,787)	18
19	Average Customers, Therms & Margin		937,531	297.57				295.96	$ 316.19		19
20	Lost Margin Prior Rate Case Customers		917,349						$ (20.24)	$ (18,566,852)	20

SOUTHWEST GAS CORPORATION
ARIZONA
AUTHORIZED 2007 TO PRESENT RATES JUNE 2010
TEST YEAR ENDED APRIL 2007

Line No.	Description (a)	Rate Sch. (b)	Bills (c)	Therms (d)	Rate (e)	BSC (f)	Commod. (g)	Total (h)	Line No.
1	General Service-Small	G-25(S)	201,805		$ 27.50	$ 5,549,638	$	$ 5,549,638	1
2				5,020,754	$ 0.57059		2,864,792	2,864,792	2
3	Total		16,817	299		$ 5,549,638	$ 2,864,792	$ 8,414,430	3
4	General Service-Medium	G-25(M)	193,790		$ 43.50	$ 8,429,865	$	$ 8,429,865	4
5				45,530,269	$ 0.37996		17,299,681	17,299,681	5
6	Total		16,149	2,819		$ 8,429,865	$ 17,299,681	$ 25,729,546	6
7	General Service-Large	G-25(L)	85,510		$ 160.00	$ 13,681,600	$	$ 13,681,600	7
8				149,222,854	$ 0.29084		43,399,975	43,399,975	8
9	Total		7,126	20,941		$ 13,681,600	$ 43,399,975	$ 57,081,575	9
10	Fixed					$ 27,661,103	$ 0	$ 27,661,103	10
11	Variable					0	63,564,448	63,564,448	11
12	Total General Service		40,092	199,773,877		$ 27,661,103	$ 63,564,448	$ 91,225,550	12

SOUTHWEST GAS CORPORATION
ARIZONA
AUTHORIZED 2007 TO PRESENT RATES JUNE 2010
TEST YEAR ENDED JUNE 2010
LOST MARGIN DUE TO DECLINING NUMBER OF CUSTOMERS AND AVERAGE USE

Line No.	Description	Rate Sch.	Bills	Therms	Rate	BSC	Commodity	2010 Total	2007 Total	2010 vs 2007	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	
1	General Service-Small	G-25(S)	205,593		$ 27.50	$ 5,653,808	$	$ 5,653,808	5,549,638	$ 104,170	1
2				3,952,061	$ 0.57059		2,255,006	2,255,006	2,864,792	(609,786)	2
3	Total		17,133	231		$ 5,653,808	$ 2,255,006	$ 7,908,814	8,414,430	$ (505,616)	3
4	General Service-Medium	G-25(M)	181,390		$ 43.50	$ 7,890,465	$	$ 7,890,465	8,429,865	$ (539,400)	4
5				38,658,561	$ 0.37996		14,688,707	14,688,707	17,299,681	(2,610,974)	5
6	Total		15,116	2,557		$ 7,890,465	$ 14,688,707	$ 22,579,172	25,729,546	$ (3,150,374)	6
7	General Service-Large	G-25(L)	90,008		$ 160.00	$ 14,401,280	$	$ 14,401,280	13,681,600	$ 719,680	7
8				139,934,652	$ 0.29084		40,698,594	40,698,594	43,399,975	(2,701,381)	8
9	Total		7,501	18,656		$ 14,401,280	$ 40,698,594	$ 55,099,874	57,081,575	$ (1,981,701)	9
10	Fixed					$ 27,945,553	$ 0	$ 27,945,553	$ 27,661,103	$ 284,450	10
11	Variable					0	57,642,308	57,642,308	63,564,448	(5,922,140)	11
12	Total General Service		39,749	182,545,274		$ 27,945,553	$ 57,642,308	$ 85,587,860	$ 91,225,550	$ (5,637,690)	12

SOUTHWEST GAS CORPORATION
EARLY GENERATION PLASTIC PIPE
FOOTAGE INSTALLED AS OF DECEMBER 2006
REPLACEMENT FROM 2007 THROUGH SEPTEMBER 2010
SUMMARY BY STATE

Description	Installed By	Percent Within State	Footage Dec-06	Footage Replaced 2007	2008	2009	YTD Sept 2010	45-Mth Total	Percent of 2006
California									
Aldyl A	CPN	15%	418,828	0	2,758	24,951	24,535	52,244	12.5%
ABS	N/A	0%	0	0	0	0	0	0	0.0%
Aldyl HD	SWG	2%	43,867	40,851	3,016	0	0	43,867	100.0%
PVC	SWG	84%	2,407,218	300,846	212,555	217,108	128,309	858,818	35.7%
Total California		100%	2,869,913	341,697	218,329	242,059	152,844	954,929	33.3%
Nevada									
Aldyl A	CPN	19%	1,004,792	4,921	9,368	25,577	18,310	58,176	5.8%
ABS	N/A	0%	0	0	0	0	0	0	0.0%
Aldyl HD	SWG	1%	53,842	0	537	1,793	0	2,330	4.3%
PVC	SWG	80%	4,303,867	92,737	321,988	293,603	119,739	828,067	19.2%
Total Nevada		100%	5,362,501	97,658	331,893	320,973	138,049	888,573	16.6%
Arizona									
Aldyl A	SWG	0%	11,973	0	11	0	138	149	1.2%
Aldyl A	TG&E	31%	3,080,999	48,320	52,293	88,316	74,684	263,613	8.6%
Aldyl A	BMG	1%	57,507	236	0	26,434	16,645	43,315	75.3%
ABS	TG&E	0%	46,495	4,699	7,205	9,452	3,845	25,201	54.2%
ABS	APS	1%	117,279	1,710	68,646	16,178	29,948	116,482	99.3%
Aldyl HD	SWG	16%	1,624,825	129,374	27,047	208,814	406,776	772,011	47.5%
PVC	SWG	18%	1,765,854	52,618	45,771	26,851	60,008	185,248	10.5%
PVC	TG&E	1%	147,621	335	234	267	19,279	20,115	13.6%
PVC	APS	30%	3,005,711	17,569	32,558	128,572	39,086	217,785	7.2%
Total Arizona		100%	9,858,264	254,861	233,765	504,884	650,409	1,643,919	16.7%
Total Southwest Gas			18,090,678	694,216	783,987	1,067,916	941,302	3,487,421	19.3%
Percent of 2006 Inventory				3.8%	4.3%	5.9%	5.2%		

APS Arizona Public Service
BMG Black Mountain Gas
CPN CP National
TG&E Tucson Gas & Electric DBA TEP
SWG Southwest Gas

SOUTHWEST GAS CORPORATION
ARIZONA
AHD REPLACEMENT OPTIONS

Line No.	Description	Begin	End	Write-Off Jun-10	Write-Off Post-June 10	Write-Off Total	Line No.
	(a)	(a)	(a)	(a)	(a)	(a)	
1	Eliminate Write-Off	2020	2026	$ 0	$ 0	$ 0	1
2	Ratable 20-Yr	2007	2026	3,473,637	4,236,143	7,709,780	2
3	Remaining 10.5-Yr	2007	2020	8,177,678	4,400,990	12,578,668	3
4	Remaining 3.0 Yr	2007	2013	8,177,678	7,849,600	16,027,278	4

Exhibit No.___ (RAM-6)
SHEET 2 OF 5

SOUTHWQEST GAS CORPORATION
ARIZONA
ALDYL HD REPLACEMENT PIPE CAPITAL EXPENDITURES
FOR THE PERIOD JULY 2010 THROUGH DECEMBER 2013

Line No.	Month (a)	Year (b)	Mains: Feet (c)	Mains: Cost Per Foot (d)	Mains: Capital Cost (e)	Mains: Write-Off Percent (f)	Mains: Write-Off Dollars (g)	Services: Feet (h)	Services: Cost Per Foot (i)	Services: Capital Cost (j)	Services: Write-Off Percent (k)	Services: Write-Off Dollars (l)	Total Mains & Services: Dollars (m)	Total Mains & Services: Write-Off (n)	Line No.
1	July	2010	15,332	47.01	$ 720,749	25.00%	$ 180,187	8,800	32.93	$ 289,784	25.00%	$ 72,446	$ 1,010,533	$ 252,633	1
2	August		15,332	47.01	720,749	25.00%	180,187	8,800	32.93	289,784	25.00%	72,446	1,010,533	252,633	2
3	September		15,332	47.01	720,749	25.00%	180,187	8,800	32.93	289,784	25.00%	72,446	1,010,533	252,633	3
4	October		15,332	47.01	720,749	25.00%	180,187	8,800	32.93	289,784	25.00%	72,446	1,010,533	252,633	4
5	November		15,332	47.01	720,749	25.00%	180,187	8,800	32.93	289,784	25.00%	72,446	1,010,533	252,633	5
6	December		15,332	47.01	720,749	25.00%	180,187	8,800	32.93	289,784	25.00%	72,446	1,010,533	252,633	6
7	Total		91,991		$ 4,324,497		$ 1,081,124	52,800		$ 1,738,704		$ 434,676	$ 6,063,201	$ 1,515,800	7
8	January	2011	14,080	$ 47.01	$ 661,901	22.50%	$ 148,928	8,800	$ 32.93	$ 289,784	22.50%	$ 65,201	$ 951,685	$ 214,129	8
9	February	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	9
10	March	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	10
11	April	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	11
12	May	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	12
13	June	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	13
14	July	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	14
15	August	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	15
16	September	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	16
17	October	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	17
18	November	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	18
19	December	2011	14,080	47.01	661,901	22.50%	148,928	8,800	32.93	289,784	22.50%	65,201	951,685	214,129	19
20	Total		168,960		$ 7,942,810		$ 1,787,132	105,600		$ 3,477,408		$ 782,417	$ 11,420,218	$ 2,569,549	20
21	January	2012	18,040	$ 47.01	$ 848,060	20.00%	$ 169,612	10,120	$ 32.93	$ 333,252	20.00%	$ 66,650	$ 1,181,312	$ 236,262	21
22	February	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	22
23	March	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	23
24	April	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	24
25	May	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	25
26	June	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	26
27	July	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	27
28	August	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	28
29	September	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	29
30	October	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	30
31	November	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	31
32	December	2012	18,040	47.01	848,060	20.00%	169,612	10,120	32.93	333,252	20.00%	66,650	1,181,312	236,262	32
33	Total		216,480		$ 10,176,725		$ 2,035,345	121,440		$ 3,999,019		$ 799,804	$ 14,175,744	$ 2,835,149	33
34	January	2013	15,415	$ 47.01	$ 724,643	17.50%	$ 126,813	4,865	$ 32.93	$ 160,215	17.50%	$ 28,038	$ 884,859	$ 154,850	34
35	February	2013	15,415	47.01	724,643	17.50%	126,813	4,865	32.93	160,215	17.50%	28,038	884,859	154,850	35
36	March	2013	15,415	47.01	724,643	17.50%	126,813	4,865	32.93	160,215	17.50%	28,038	884,859	154,850	36
37	April	2013	15,415	47.01	724,643	17.50%	126,813	4,865	32.93	160,215	17.50%	28,038	884,859	154,850	37
38	May	2013	15,415	47.01	724,643	17.50%	126,813	4,865	32.93	160,215	17.50%	28,038	884,859	154,850	38
39	June	2013	15,415	47.01	724,643	17.50%	126,813	4,865	32.93	160,215	17.50%	28,038	884,859	154,850	39
40	July	2013		47.01	0	17.50%	0		32.93	0	17.50%	0	0	0	40
41	August	2013		47.01	0	17.50%	0		32.93	0	17.50%	0	0	0	41
42	September	2013		47.01	0	17.50%	0		32.93	0	17.50%	0	0	0	42
43	October	2013		47.01	0	17.50%	0		32.93	0	17.50%	0	0	0	43
44	November	2013		47.01	0	17.50%	0		32.93	0	17.50%	0	0	0	44
45	December	2013		47.01	0	17.50%	0		32.93	0	17.50%	0	0	0	45
46	Total		92,488		$ 4,347,861		$ 760,876	29,192		$ 961,293		$ 168,226	$ 5,309,153	$ 929,102	46
47	Total Remaining		569,919		$ 26,791,892		$ 5,664,477	309,032		$ 10,176,424		$ 2,185,123	$ 36,968,316	$ 7,849,600	47

SOUTHWEST GAS CORPORATION
ARIZONA
DISALLOWED DOLLARS - REMAINING REPLACEMENT THROUGH JUNE 2013

Description	Year	Mains	Services	Total	Percent Disallowed	Disallowed
	2007	$ 298,767	$ 1,377,037	$ 1,675,804	32.50%	$ 544,636
	2008	4,135,001	1,078,582	5,213,583	30.00%	1,564,075
	2009	5,375,979	4,246,442	9,622,421	27.50%	2,646,166
January to June	2010	10,444,643	3,246,563	13,691,206	25.00%	3,422,801
July to December	2010	4,324,497	1,738,704	6,063,201	25.00%	1,515,800
	2011	7,942,810	3,477,408	11,420,218	22.50%	2,569,549
	2012	10,176,725	3,999,019	14,175,744	20.00%	2,835,149
	2013	4,347,861	961,293	5,309,153	17.50%	929,102
	2014			0	15.00%	0
	2015			0	12.50%	0
	2016			0	10.00%	0
	2017			0	7.50%	0
	2018			0	5.00%	0
	2019			0	2.50%	0
	2020			0	0.00%	0
	2021			0	0.00%	0
	2022			0	0.00%	0
	2023			0	0.00%	0
	2024			0	0.00%	0
	2025			0	0.00%	0
	2026			0	0.00%	0
Total		$ 47,046,283	$ 20,125,047	$ 67,171,330	23.86%	$ 16,027,278
Actual Write-Off through June 2010						$ 8,177,678
Remaining Write-Off						$ **7,849,600**

SOUTHWEST GAS CORPORATION
ARIZONA
DISALLOWED DOLLARS - REMAINING REPLACEMENT THROUGH DECEMBER 2020

Description	Year	Mains	Services	Total	Percent Disallowed	Disallowed
	2007	$ 298,767	$ 1,377,037	$ 1,675,804	32.50%	$ 544,636
	2008	4,135,001	1,078,582	5,213,583	30.00%	1,564,075
	2009	5,375,979	4,246,442	9,622,421	27.50%	2,646,166
January to June	2010	10,444,643	3,246,563	13,691,206	25.00%	3,422,801
July to December	2010	1,275,804	484,592	1,760,396	25.00%	440,099
	2011	2,551,609	969,183	3,520,792	22.50%	792,178
	2012	2,551,609	969,183	3,520,792	20.00%	704,158
	2013	2,551,609	969,183	3,520,792	17.50%	616,139
	2014	2,551,609	969,183	3,520,792	15.00%	528,119
	2015	2,551,609	969,183	3,520,792	12.50%	440,099
	2016	2,551,609	969,183	3,520,792	10.00%	352,079
	2017	2,551,609	969,183	3,520,792	7.50%	264,059
	2018	2,551,609	969,183	3,520,792	5.00%	176,040
	2019	2,551,609	969,183	3,520,792	2.50%	88,020
	2020	2,551,609	969,183	3,520,792	0.00%	0
	2021			0	0.00%	0
	2022			0	0.00%	0
	2023			0	0.00%	0
	2024			0	0.00%	0
	2025			0	0.00%	0
	2026			0	0.00%	0
Total		$ 47,046,283	$ 20,125,047	$ 67,171,330	18.73%	$ 12,578,668
Actual Write-Off through June 2010						$ 8,177,678
Remaining Write-Off						$ **4,400,990**

SOUTHWEST GAS CORPORATION
ARIZONA
DISALLOWED DOLLARS GIVEN A 20-YEAR RATABLE REPLACEMENT

Description	Year	Mains	Services	Total	Percent Disallowed	Disallowed
	2007	$ 2,382,685	$ 1,006,229	$ 3,388,914	32.50%	$ 1,101,397
	2008	2,382,685	1,006,229	3,388,914	30.00%	1,016,674
	2009	2,382,685	1,006,229	3,388,914	27.50%	931,951
	2010	2,382,685	1,006,229	3,388,914	25.00%	847,229
	2011	2,382,685	1,006,229	3,388,914	22.50%	762,506
	2012	2,382,685	1,006,229	3,388,914	20.00%	677,783
	2013	2,382,685	1,006,229	3,388,914	17.50%	593,060
	2014	2,382,685	1,006,229	3,388,914	15.00%	508,337
	2015	2,382,685	1,006,229	3,388,914	12.50%	423,614
	2016	2,382,685	1,006,229	3,388,914	10.00%	338,891
	2017	2,382,685	1,006,229	3,388,914	7.50%	254,169
	2018	2,382,685	1,006,229	3,388,914	5.00%	169,446
	2019	2,382,685	1,006,229	3,388,914	2.50%	84,723
	2020	2,382,685	1,006,229	3,388,914	0.00%	0
	2021	2,382,685	1,006,229	3,388,914	0.00%	0
	2022	2,382,685	1,006,229	3,388,914	0.00%	0
	2023	2,382,685	1,006,229	3,388,914	0.00%	0
	2024	2,382,685	1,006,229	3,388,914	0.00%	0
	2025	2,382,685	1,006,229	3,388,914	0.00%	0
	2026	2,382,685	1,006,229	3,388,914	0.00%	0
Total		$ 47,653,708	$ 20,124,577	$ 67,778,285	11.38%	$ 7,709,780
Actual Write-Off through June 2010						$ 8,177,678
Actual greater Than Ratable Over 20-Yrs.						$ **(467,898)**

SOUTHWEST GAS CORPORATION
ARIZONA
INCREMENTAL CONTRIBUTION METHOD (ICM) MODEL
GUIDELINES

Last Update: 07/09/2010

Model Owner	The Model Owner is the Corporate Development Department. All questions or issues with the model should be directed to Corporate Development.
Goal	The goal of the ICM is to ensure that service to new customers can be provided with incremental investment and expenses that are supported by the expected incremental margin from the new customers. The incremental cost of providing service to new customers should not place a burden on existing customers or the shareholders who provide the capital to serve these new customers.
ICM	The ICM is a cost of service model that simulates the rate case process. The model calculates incremental margin (standard appliance use applied to Arizona Corporation Commission (ACC) authorized rates) investment (direct per Work Requests (WR's) and standard based on historical averages), operation and maintenance (O & M) (historical statewide averages), depreciation (ACC authorized rates), property tax (ACC rates embedded in current rates), interest expense (ACC authorized cost of debt and preferred) and common equity and income taxes on common equity (ACC authorized amounts). Refer to Standard Practice (SP) 920.0 for procedures regarding use and updates to the model.
Target	On December 19, 2008 the ACC authorized Southwest to place rates into effect that were based on the premise that the Company would earn an overall rate of return of 8.86 percent, and a return on shareholder capital of 10.00 percent. The ICM results should at least equal, if not exceed, the ACC authorized level (8.86%).
Results 3 Yr.	Both the 3-Yr. Aver. and Year Four results must at least equal the authorized level. Main extension (MEC) Advances and Contributions In Aid of Construction (CIAC) will use the 3-Year Average results for calculation and refunds. All first year capital cost will be advanced to the Company. A CIAC will be required for projects that fail to achieve Year 4 Target Results.
Results 5 Yr.	5-Year average results can be used for long term projects for information purposes. 5-Year Average and Year Six results must at least equal the authorized levels. Senior management approval must be obtained for use as a project justification.
Adv.-100%	Is the sum of all first year capital expenditures except service extensions and meters. MEC's will be reviewed annually for adjustment of advance.

SOUTHWEST GAS CORPORATION
ARIZONA
INCREMENTAL CONTRIBUTION METHOD (ICM) MODEL
GUIDELINES

Last Update: 07/09/2010

Margin	The Company's Tariff provides that the builder, or customer, must provide the number of homes and types of gas appliances that will be included in each home. Appliance inputs should only include gas appliances, including dryer stub, that will be provided as standard equipment at no extra cost to the purchaser of the home. Appliances and or stubs for equipment that will only be provided for a charge to the ultimate purchaser of the home will not be included in the margin calculation. The one exception is a gas fireplace and or log. Additional use is provided for homes that provide gas drying as standard without a 220 volt receptacle unless one is requested by the ultimate (first) purchaser of the home.
Appliances	Space Heat - One, two or three furnaces - Use is district specific Water heat - One or two furnace homes - Use is district specific Cooking - Standard Arizona expected value Cooking/Oven - Combination cooktop and gas oven and or broiler (Inventory both Ck & Ov) Drying W 220 - Standard Arizona expected value Drying WO 220 - Standard Arizona expected value Log - Standard Arizona expected value BBQ, Pool, Spa - No use for these or other ancillary gas appliances
Commercial	Appliance use is business specific and is the responsibility of Commercial-Customer Service Planning (CSP) for its accuracy. Should be based on experience of similar customers in similar lines of business. Choice of the appropriate rate schedule is Commercial-CSP responsibility. Demand charge calculation is Commercial-CSP or Key Accounts Management (KAM) responsibility.
Buildout	Critical to the workings of the model. All Blanket Identification (BI) numbers below must have a buildout percent of 100%. Except service extension and meters. General rule BI No's 9603 (4",6" & Steel), 9606, 9607, 9612 and 9635 have a first year buildout of 100%. BI 9603 (2") mains and 9608 Service-Stub have the same buildout percent. BI 9608 Service-Extension and meters have the same buildout percent. CSP-Residential, CSP-Commercial. or KAM is responsible for the accuracy of the customer buildout percent.

SOUTHWEST GAS CORPORATION
ARIZONA
INCREMENTAL CONTRIBUTION METHOD (ICM) MODEL
GUIDELINES

Last Update: 07/09/2010

Investment	BI 9603	Mains	WR specific. Estimates should include 4"PE ,6" PE and 2" PE. If applicable the cost of steel pipe should also be *included*.
	BI 9606	Mains	District specific standard amounts by on historical results.
	BI 9607	Reg. Sta.	WR specific.
	BI 9608	Serv.-Stub	District specific standard amounts based on historical results.
		Serv. Ext.	District specific standard amounts based on historical results.
	BI 9610	Meters	Based on size of meter. Statewide average cost with ERTS. WR specific for large industrial meters and regulation equipment.
	BI 9612	Ind. Reg.	WR specific.
	BI 9635	HP Main	WR specific. Used only in remote large project analysis.
CIAC	Can be input manually or solved by using Excel "Goal Seek". Instructions are contained in the cost input sheet. Must solve for the authorized level result using one of the following Cost Input sheet cells: I-32, I-33, L-29, N-29.		
Expense	Statewide average based on Twelve Months Ended (TME) December 2008. Includes Blue Stake, Meter Reading, Appl. Services, CAP-Billing, uncollectible & liability insurance. Excludes customer installation and return check-collection expense and fees (revenue authorized to recover such expense).		
Other Exp	Builder incentives and/or KAM - CSP incentives. The authorized level of results, based on the 3-Year Average, obtained both before and after incentive.		

Arizona Incremental Contribution Model Cost Inputs

#N/A

0

WR No. 0

CSS No. 0

	Std.	
Work Order Description		
District Number		
Work Order/Request No.		
CSS No.		
Feet - Steel		
Feet - 6" and or 8" PE		
Feet 4" Main		
Feet 2" Main		
Main $ - Lrg. Diam. Pipe If Known or Est. Per WMIS		
Main $ 2" Pipe If Known or Estimated		
Main $ **Total** If Separate Amts. Above Known Then $0		
Feet - Pressure Reinforce. (Optional) - Bl. No. 9606		
$ - Pressure Reinforce. (Std.) - Bl. No. 9606	#N/A	#N/A
Feet High-Pressure (HP-Main) Distribution Main		
HP-Main $ - Bl. No. 9635		
Std Serv. Stub Ft. Per Cust. or Actual If Greater	#N/A	
Std. Serv. Ext. Ft. Per Cust. or Actual If Greater	#N/A	
Std. Serv. Stub $ Per Ft Per Cust. or Actual If Greater	#N/A	
Std. Serv. Ext. $ Per Ft Per Cust. or Actual If Greater	#N/A	
Comm./KAM Service Feet		
Comm./KAM Service Cost		
Reg. Sta. $ Per WMIS Estimate - Bl. No. 9607		
Industrial Reg. Sta. $ Bl-9612 Est. Per WMIS or KAM		
No. of Meters-250-With ERTS	$184	
No. of Meters-425-With ERTS	$268	
No. of Meters-630-With ERTS	$697	
No. of Meters Commercial/KAM - See Gen Serv. Sales Input		-
Meters-Comm./KAM-Actual Per WMIS Cost Est.-Avg Per Meter		$ -
Other Expense		

Residential Customers	No. of Appl.
SFH BSC	
MFH BSC	
Space Heating - SFH - One Heating System	
Space Heating - SFH - Two Heating Systems	
Space Heating - SFH - Three Heating Systems	
SFH Water Heat- One Heating System	
SFH Water Heat - Two/Three Heating Systems	
SFH Cook Top Without Gas Oven and/or Broiler	
SFH Range w/ Gas Cook top & Oven and/or Broiler	
SFH Dryer - Stub & 220 Electric Plug - Customer Option	
SFH Dryer Stub - No 220 Electric Plug - Gas Dryer Only	
SFH Gas Log	
Space Heating - MFH Multi-Family Home	
MFH Water Heat- One Heating System	
MFH Cook Top Without Gas Oven and/or Broiler	
MFH Range w/ Gas Cook top & Oven and/or Broiler	
MFH Dryer - Stub & 220 Electric Plug - Customer Option	
MFH Dryer Stub - No 220 Electric Plug - Gas Dryer Only	
MFH Gas Log	

	Est. Cost	Advance	CIAC
Large Diameter Mains	0	0	
2" Inch Mains	0	0	
Main $ **Total** If Separate Amts. Unkown	0		
Pressure Reinforcement	#N/A		
High Pressure Dist Pipe	0		
Service Stubs	0	0	
Services Extensions	0		
Comm./KAM Service Cost	0		
Regulator Stations	0		
Industrial Regulating Stations	0		
Meters	0	0	
Total	#N/A	0	0
100% of Eligible Project Est. Cost		#N/A	
Percent of 100% of Advance			-

	Customer Advance Year End Balance (-)					Avg. Adv.
Gross Adv.	$0	$0	$0	$0	$0	
Adv.LessTax	$0	$0	$0	$0	$0	Yrs. Of Adv.
% Yr. End						0
Results	**Year1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
ROR on RB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
ROE (Eq.)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

	ROR	ROE
3-Yr Aver.	#N/A	#N/A
5-Yr. Aver.	#N/A	#N/A

Source
CSP/Builder
WMS
CIAC-Option

CIAC Option

1. Click on either cell L-29, N-29, I-32, I-33
2. Click "Data" tab, then "What-If Analysis" icon, then "Goal Seek"
3. Put cursor in "To value" box, enter 8.86%
4. Put cursor in "By changing cell" box, click on one cell from N10 to N18 except N16
5. Click "OK"

Investment Per Customer Before CIAC	#N/A
Investment Per Customer After CIAC	#N/A

Customer Statistics	Resid.	Gen Service	Total
Total Customer Adds	0	0	0
Annual Therms After Buildout	#N/A	0	#N/A
Annual Margin After Buildout	#N/A	0	#N/A
Avg. Margin Per Cust.	0	0	
Avg. Use Per Cust.	0	0	

Please notice: The Service Stub Feet per Customer is smaller than the standard.
Please notice: The Service Extension Feet per Customer is smaller than the standard.
Please notice: The Service Stub $ per Ft per Customer is smaller than the standard.
Please notice: The Service Extension $ per Ft per Customer is smaller than the standard.

Arizona Incremental Contribution Model General Gas Service Sales Input

#N/A

0

WR No. 0

CSS No. 0

Customer Class	Annual Require ments	Gas Appliance/Equipment	Avg Therms per Appl/Equip per Year	No. of Appliance/ Equip	Total Therms
General Service G-25 (**Small** Customers) - Per CSP	<= 600 Therms				-
					-
					-
					-
					-
					-
					-
					-
					-
					-
Total Therms per Year for this Customer Class		-	*Total Therms per Year per Small Customer*		-

Small Customer Additions by Year

One	Two	Three	Four	Five	Six	Total
						0

Customer Class	Annual Require ments	Gas Appliance/Equipment	Avg Therms per Appl/Equip per Year	No. of Appliance/ Equip	Total Therms
General Service G-25 (**Medium** Customers) - Per CSP	> 600 Therms and <= 7200 Therms				-
					-
					-
					-
					-
					-
					-
					-
					-
					-
Total Therms per Year for this Customer Class		-	*Total Therms per Year per Medium Customer*		-

Medium Customer Additions by Year

One	Two	Three	Four	Five	Six	Total
						0

Arizona Incremental Contribution Model General Gas Service Sales Input

#N/A

0

WR No. 0

CSS No. 0

Customer Class	Annual Requirements	Gas Appliance/Equipment	Avg Therms per Appl/Equip per Year	No. of Appliance/Equip	Total Therms
General Service G-25 (**Large** Customers) - Per CSP or KAM	> 7200 Therms and <=180,000 Therms				-
					-
					-
					-
					-
					-
					-
					-
					-
					-
Total Therms per Year for this Customer Class		-	*Total Therms per Year per Large Customer*		-

Large Customer Additions by Year

One	Two	Three	Four	Five	Six	Total
						0

Customer Class	Annual Requirements	Gas Appliance/Equipment	Avg Therms per Year per Appliance	No. of Appliance/Equip	Total Therms
Transportation-Eligible General Service (**KAM** Customers)	> 180,000 Therms				-
					-
					-
					-
					-
					-
					-
					-
					-
					-
Total Therms per Year for this Customer Class		-	*Total Therms per Year per KAM Customer*		-

Annual Basic Service Charge per Customer	
Annual Demand Charge (KAM Calculated)	
Commodity Rate per Therm	

KAM Customer Additions by Year

One	Two	Three	Four	Five	Six	Total
						0

SOUTHWEST GAS CORPORATION

#N/A

0

WR No. 0

CSS No. 0

SALES INPUT

Other Expense Buildout-Total Must = 100%

One	Two	Three	Four	Five	Six	
100%						100%

Project Build-Out As a Percent to Total

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Large Diameter PE & Steel (% by year)	100%						100%
Interior Main (% by year)	100%						100%
Main $ **Total** If Separate Amts. Above Unknown Then $0	100%						100%
Main CIAC (% by Year)	100%						100%
Pressure Reinforcement Main	100%						100%
High Pressure Distribution Main	100%						100%
Service Stub (% by year)	100%						100%
Service Extension (% by year)	100%						100%
Service Comm./KAM	100%						100%
Service CIAC (% by Year)	100%						100%
Regulator Stations (% by year)	100%						100%
Regulator Stations CIAC (% by year)	100%						100%
Industrial Regulator Stations (% by Year)	100%						100%
Industrial Regulator Stations CIAC (% by Year)	100%						100%
Meter Set' (% by year)-Non-A/C	100%						100%

#N/A

SOUTHWEST GAS CORPORATION
#N/A
0

WR No. 0
CSS No. 0

Description	Standard Length	Standard Cost / Ft.	Per Cust / Customers	Footage	Dollars	Cost Per Foot	Cost Per Customer	Feet Per Customer
Main								
Steel Main - Lrg Diameter Steel				0	$			#DIV/0!
6" Main - Large Diameter PE				0				#DIV/0!
4" Main - Large Diameter PE				0				#DIV/0!
Large Diameter Main				0	0			
2" Main - Interior				0	0			#DIV/0!
Total Main Before CIAC			0	0	$ 0	$ #DIV/0!	$ #DIV/0!	#DIV/0!
CIAC-Main					0			
Main After CIAC					$ 0	$ 0.00		
Main-Pressure Reinforcement				0	$ #N/A	$ 0.00		
Less: CIAC					0			
Net Pressure Reinforcement					$ #N/A	$ 0.00		
Main-High Pressure Distribution				0	$ 0	$ 0.00		
Less: CIAC					0			
Net High Pressure Distribution					$ 0	$ 0.00		
Service								
1" or 1/2" Service-Stub	0	0.00	0	0	$ 0	$ 0.00	$ 0	0
1/2" Service Extension	0	0.00	0	0	0	0.00	0	0
Comm./KAM			0	0	0	0.00	0	0
Total Service			0	0	$ 0	$ 0.00	$ #DIV/0!	#DIV/0!
Less CIAC					0			
Net Service After CIAC					$ 0	$ 0.00	$ #DIV/0!	
Regulator Station Eq.					$ 0			
Less CIAC					0			
Net Regulating Stations					0			
Industrial Regulating Stations					$ 0			
Less CIAC					0			
Net Industrial Regulating Stations					0			
Meters-Installed								
Meters-250-With ERTS		$184	0		$ 0		$ 0	
Meters-425-With ERTS		$268	0		0		0	
Meters-630-With ERTS		$697	0		0		0	
Meters-Comm./KAM		$0	0		0		0	
Total Meters			0		$ 0		$ 0	
					#N/A			
Total CIAC					0			
Total After CIAC					#N/A			

Capital By Year		Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Large Diameter PE & Steel	$	0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Interior Main		0	0	0	0	0	0	0
Total Main if Separate Not Known		0	0	0	0	0	0	0
CIAC Main		0	0	0	0	0	0	0
Pressure Reinforcement Main		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
High Pressure Distribution Main		0	0	0	0	0	0	0
Service Stub		0	0	0	0	0	0	0
Service Extension		0	0	0	0	0	0	0
Service Comm./KAM		0	0	0	0	0	0	0
CIAC Service		0	0	0	0	0	0	0
Regulator Stations		0	0	0	0	0	0	0
Regulator Stations - CIAC		0	0	0	0	0	0	0
Industrial Reg. Stations		0	0	0	0	0	0	0
Industrial Reg. Stations - CIAC		0	0	0	0	0	0	0
Meter Set		0	0	0	0	0	0	0
	$	#N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A

Total Project Cost $ #N/A

Exhibit No.____ (RAM-7)
SHEET 8 OF 23

SOUTHWEST GAS CORPORATION

0

0

Description	Total Project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Capital Expenditures							
Approach Main	0	0	0	0	0	0	0
Interior Main	0	0	0	0	0	0	0
Total Main if Separate Not Known	0	0	0	0	0	0	0
Main CIAC	0	0	0	0	0	0	0
Pressure Reinforcement Main	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
High Pressure Distribution Main	0	0	0	0	0	0	0
Service Stub	0	0	0	0	0	0	0
Service Extension	0	0	0	0	0	0	0
Service Comm./KAM	0	0	0	0	0	0	0
Service CIAC	0	0	0	0	0	0	0
Regulator Station Eq.	0	0	0	0	0	0	0
Regulator Station Eq. CIAC	0	0	0	0	0	0	0
Industrial Regulating Sta.	0	0	0	0	0	0	0
Industrial Regulating Sta. CIAC	0	0	0	0	0	0	0
Meter Set Assembly - Standard	0	0	0	0	0	0	0
Total Capital Expenditures	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Completion Percentage							
Approach Main		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Interior Main		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Main if Separate Not Known		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Main CIAC %		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Pressure Reinforcement Main		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
High Pressure Distribution Main		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Service Stub		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Service Extension		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Service Comm./KAM		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Service CIAC		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Regulator Station Eq.		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Regulator Station Eq. CIAC		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Industrial Regulating Sta.		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Industrial Regulating Sta. CIAC		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Meter Set Assembly - Standard		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Capital Expenditures							

SOUTHWEST GAS CORPORATION

0

0

Description	Total Project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Gross Plant							
Approach Main		0	0	0	0	0	0
Interior Main		0	0	0	0	0	0
Total Main if Separate Not Known		0	0	0	0	0	0
Main CIAC		0	0	0	0	0	0
Pressure Reinforcement Main		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
High Pressure Distribution Main		0	0	0	0	0	0
Service Stub		0	0	0	0	0	0
Service Extension		0	0	0	0	0	0
Service Comm./KAM		0	0	0	0	0	0
Service CIAC		0	0	0	0	0	0
Regulator Station Eq.		0	0	0	0	0	0
Regulator Station Eq. CIAC		0	0	0	0	0	0
Industrial Regulating Sta.		0	0	0	0	0	0
Industrial Regulating Sta. CIAC		0	0	0	0	0	0
Meter Set Assembly - Standard		0	0	0	0	0	0
Total Gross Plant		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Accumulated Depreciation							
Approach Main		0	0	0	0	0	0
Interior Main		0	0	0	0	0	0
Total Main if Separate Not Known		0	0	0	0	0	0
Main CIAC		0	0	0	0	0	0
Pressure Reinforcement Main		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
High Pressure Distribution Main		0	0	0	0	0	0
Service Stub		0	0	0	0	0	0
Service Extension		0	0	0	0	0	0
Service Comm./KAM		0	0	0	0	0	0
Service CIAC		0	0	0	0	0	0
Regulator Station Eq.		0	0	0	0	0	0
Regulator Station Eq. CIAC		0	0	0	0	0	0
Industrial Regulating Sta.		0	0	0	0	0	0
Industrial Regulating Sta. CIAC		0	0	0	0	0	0
Meter Set Assembly - Standard		0	0	0	0	0	0
Total Accumulated Depreciation		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Net Plant							

SOUTHWEST GAS CORPORATION

0

0

Description	Total Project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Approach Main		0	0	0	0	0	0
Interior Main		0	0	0	0	0	0
Total Main if Separate Not Known		0	0	0	0	0	0
Main CIAC		0	0	0	0	0	0
Pressure Reinforcement Main		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
High Pressure Distribution Main		0	0	0	0	0	0
Service Stub		0	0	0	0	0	0
Service Extension		0	0	0	0	0	0
Service Comm./KAM		0	0	0	0	0	0
Service CIAC		0	0	0	0	0	0
Regulator Station Eq.		0	0	0	0	0	0
Regulator Station Eq. CIAC		0	0	0	0	0	0
Industrial Regulating Sta.		0	0	0	0	0	0
Industrial Regulating Sta. CIAC		0	0	0	0	0	0
Meter Set Assembly - Standard		0	0	0	0	0	0
Total Net Plant		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

SOUTHWEST GAS CORPORATION

0

0

Description	Total Project Bk Depr. Rate	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Annual Book Depreciation							
Approach Main	3.82%	0	0	0	0	0	0
Interior Main	3.82%	0	0	0	0	0	0
Total Main if Separate Not Known	3.82%	0	0	0	0	0	0
Main CIAC	3.82%	0	0	0	0	0	0
Pressure Reinforcement Main	3.82%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
High Pressure Distribution Main	3.82%	0	0	0	0	0	0
Service Stub	5.30%	0	0	0	0	0	0
Service Extension	5.30%	0	0	0	0	0	0
Service Comm./KAM	5.30%	0	0	0	0	0	0
Service CIAC	5.30%	0	0	0	0	0	0
Regulator Station Eq.	4.12%	0	0	0	0	0	0
Regulator Station Eq. CIAC	4.12%	0	0	0	0	0	0
Industrial Regulating Sta.	4.31%	0	0	0	0	0	0
Industrial Regulating Sta. CIAC	4.31%	0	0	0	0	0	0
Meter Set Assembly - Standard	1.98%	0	0	0	0	0	0
Total Book Depreciation		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rate Base							
Beginning Balance							
Gross Plant		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Net Plant		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Less Advances Net of Tax		0	0	0	0	0	0
Rate Base		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ending Balance							
Net Plant		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Less Advances Net of Tax		0	0	0	0	0	0
Rate Base		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average Rate Base		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

SOUTHWEST GAS CORPORATION
#N/A
0
WR No. 0
CSS No. 0
INCREMENTAL RESULTS OF OPERATIONS

Description	Year of Full Service: One	Two	Three	Four	Five	Six	Three Yr. Average	Five Yr Average
Single Family-Multi-Family	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	0
Margin-General Service	0	0	0	0	0	0	0	0
Margin	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	0
Less: Expenses								
Incremental Oper. & Maint.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Other Expense	0	0	0	0	0	0	0	0
Depreciation	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Property Taxes		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Interest	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Incremental Expense	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Taxable Income	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Income Tax	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Income Avail. For Common	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Utility Inc. (Int. + Inc Avail. Com)	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Return on Rate Base	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
Return on Common Equity	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
Gross Plant - Beginning Balance	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Current Years Additions	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
End of Year Balance	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Beginning Advance	0	0	0	0	0	0	0	0
Net Cap Ex	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Less Accumulated Depreciation	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Net Plant In Service	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Customer Advance-Received (-)	0	0	0	0	0	0	0	0
Rate Base	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Average Rate Base	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A
Percent Customer Adds-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Residential Customer Adds	0	0	0	0	0	0		
Cumulative Residential Adds	0	0	0	0	0	0		
General Service Customer Adds	0	0	0	0	0	0		
Cumulative General Service Adds	0	0	0	0	0	0		
Margin Per Customer	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0		
Residential O & M Per Customer	$ 29	$ 29	$ 29	$ 29	$ 29	$ 29		
General Service Customer O & M	$ 61	$ 61	$ 61	$ 61	$ 61	$ 61		
Service Extension Per Cust.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0		
Meter Set Per Customer	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0		
Project Property Tax Rate	2.65%	2.65%	2.65%	2.65%	2.65%	2.65%		
Property Tax Plant	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A	$ #N/A		
Auth. Weighted Cost of Debt	4.51%	4.51%	4.51%	4.51%	4.51%	4.51%		

#REF!
#REF!

SOUTHWEST GAS CORPORATION
#N/A
0
WR No. 0
CSS No. 0
RESIDENTIAL MARGIN

Gas Applications (a)	No. Of Homes-Appl. (b)	Per Appl. Usage (c)	Total Therms (d) (b) x (c)	Rates (e)	Margin (f) (d) x (e)
Fixed Component-Homes					
BSC - Single Family Homes	0			$ #N/A	$ #N/A
BSC-Multi-Family	0			#N/A	#N/A
Total Basic Service Margin	0				$ #N/A
Variable Component-Appliances					
Space Heating - SFH - One Heating System	0	#N/A	#N/A	$ #N/A	$ #N/A
Space Heating - SFH - Two Heating Systems	0	#N/A	#N/A	#N/A	#N/A
Space Heating - SFH - Three Heating Systems	0	#N/A	#N/A	#N/A	#N/A
SFH Water Heat- One Heating System	0	#N/A	#N/A	#N/A	#N/A
SFH Water Heat - Two/Three Heating Systems	0	#N/A	#N/A	#N/A	#N/A
SFH Cook Top Without Gas Oven and/or Broiler	0	#N/A	#N/A	#N/A	#N/A
SFH Range w/ Gas Cook top & Oven and/or Broiler	0	#N/A	#N/A	#N/A	#N/A
SFH Dryer - Stub & 220 Electric Plug - Customer Option	0	#N/A	#N/A	#N/A	#N/A
SFH Dryer Stub - No 220 Electric Plug - Gas Dryer Only	0	#N/A	#N/A	#N/A	#N/A
SFH Gas Log	0	#N/A	#N/A	#N/A	#N/A
Space Heating - MFH Multi-Family Home	0	#N/A	#N/A	#N/A	#N/A
MFH Water Heat- One Heating System	0	#N/A	#N/A	#N/A	#N/A
MFH Cook Top Without Gas Oven and/or Broiler	0	#N/A	#N/A	#N/A	#N/A
MFH Range w/ Gas Cook top & Oven and/or Broiler	0	#N/A	#N/A	#N/A	#N/A
MFH Dryer - Stub & 220 Electric Plug - Customer Option	0	#N/A	#N/A	#N/A	#N/A
MFH Dryer Stub - No 220 Electric Plug - Gas Dryer Only	0	#N/A	#N/A	#N/A	#N/A
MFH Gas Log	0	#N/A	#N/A	#N/A	#N/A
Total Commodity Margin			#N/A		$ #N/A
Total Residential Margin					$ #N/A
Average Margin Per Customer					$ -

SOUTHWEST GAS CORPORATION
#N/A
0
WR No. 0
CSS No. 0
GENERAL SERVICE MARGIN

		Average Per Cust		Customer Adds Year 1 through 6						Margin By Year					
	Rates	Use	Margin	1	2	3	4	5	6	1	2	3	4	5	6
General Service G-25(S)															
Basic Service Charge	$ 330		$ 330							$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Commodity Rate	0.57059	0	0							0	0	0	0	0	0
Total Therms / Margin		0	$ 330	0	0	0	0	0	0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Cumulative				0	0	0	0	0	0						
General Service G-25(M)															
Basic Service Charge	$ 522		$ 522							$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Commodity Rate	0.37996	0	0							0	0	0	0	0	0
Total Therms / Margin		0	$ 522	0	0	0	0	0	0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Cumulative				0	0	0	0	0	0						
General Service G-25(L)															
Basic Service Charge	$ 1,920		$ 1,920							$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Commodity Rate	0.29084	0	0							0	0	0	0	0	0
Total Therms / Margin		0	$ 1,920	0	0	0	0	0	0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Cumulative				0	0	0	0	0	0						
Other Rate Schedule															
Basic Service Charge	$ 0		$ 0							$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Demand Charge	0		0							0	0	0	0	0	0
Commodity Rate	0.00000	0	0							0	0	0	0	0	0
Total Therms / Margin		0	$ 0	0	0	0	0	0	0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Cumulative				0	0	0	0	0	0						
Total General Service Cust.				0	0	0	0	0	0						
Cumulative Customers				0	0	0	0	0	0						
Total Therms		0													
Cumulative Margin										0	0	0	0	0	0

ICM MODEL
KEY PARAMETERS
ACC AUTHORIZED

Allowed Rate of Return	Input
Percent Long-Term Debt =	52.08%
Percent Preferred Equity =	4.48%
Percent Common Equity =	43.44%
Total =	100.00%
Cost of Long-Term Debt =	7.96%
Cost of Preferred Equity =	8.20%
Return on Common Equity =	10.00%
Tax Rates	
Federal Income Tax Rate =	35.00%
Arizona Income Tax Rate =	6.97%
Property Tax Rate =	2.65%
Book Depreciation Rates	
Approach Main =	3.82%
Interior Main =	3.82%
Regulator Station Eq. =	4.12%
Service Stub =	5.30%
Service Extension =	5.30%
Meter Set Assembly - Standard =	1.98%
Other	
Uncollectibles =	0.2989%

ALLOWED RATE OF RETURN

	Weight	Regulatory Rate	Weighted Regulatory Rate	Pretax Rate	Weighted Pretax Rate	After-Tax Rate	Weighted After-Tax Rate
Long-Term Debt	52.08%	7.96%	4.15%	7.96%	4.15%	4.81%	2.51%
Preferred Equity	4.48%	8.20%	0.37%	8.20%	0.37%	4.96%	0.22%
Common Equity	43.44%	10.00%	4.34%	16.59%	7.21%	10.00%	4.34%
	100.00%		8.86%		11.72%		7.07%

Effective Tax Rate

State Tax Rate	6.97%	Weighted Long-Term Debt & Preferred = 4.51%
Federal Tax Rate	35.00%	
Effective Tax Rate[1]	39.53%	

Gross Revenue Conversion Factor

$1 Revenue	1.0000000	
Less Uncollectibes	0.0029890	
Subtotal	0.9970110	
Less State Income Tax	0.0694717	
Subtotal	0.9275393	
Less Federal Income Tax	0.3246387	
Total	0.6029005	
Gross Revenue Conversion Factor	1.6586484	= $1 / Total
Rounded	1.6586500	

[1] Effective Tax Rate = (1-State Tax Rate) X Federal Tax Rate + State Tax Rate

ACC Authorized Rates

SOUTHWEST GAS CORPORATION
ARIZONA
RESIDENTIAL APPLIANCE USAGE AND RATES, SERVICE FOOTAGE AND COST PER FOOT

Description	Valley 32	Bullhead City 34	Tucson 36	Phoenix 42	Ajo 44	Mtn 46	Southeast 47	Yuma 48	Parker Wickenb 49
Space Heating - SFH - One Heating System	[redacted]								
Space Heating - SFH - Two Heating Systems									
Space Heating - SFH - Three Heating Systems									
Space Heating - MFH Multi-Family Home									
SFH/MFH Water Heat- One Heating System									
SFH Water Heat - Two/Three Heating Systems									
SFH/MFH Cook Top Without Gas Oven and/or Broiler									
SFH/MFH Range w/ Gas Cook top & Oven and/or Broiler									
SFH/MFH Dryer - Stub & 220 Electric Plug - Customer Option									
SFH/MFH Dryer Stub - No 220 Electric Plug - Gas Dryer Only									
SFH/MFH Gas Log									
Sch. G-5 Single-Family Residential									
Basic Service Charge-Monthly	$ 10.70	$ 10.70	$ 10.70	$ 10.70	$ 10.70	$ 10.70	$ 10.70	$ 10.70	$ 10.70
Basic Service Charge Annual	$ 128.40	$ 128.40	$ 128.40	$ 128.40	$ 128.40	$ 128.40	$ 128.40	$ 128.40	$ 128.40
Space Heating - SFH - One Heating System	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
Space Heating - SFH - Two Heating Systems	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
Space Heating - SFH - Three Heating Systems	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
SFH Water Heat- One Heating System	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
SFH Water Heat - Two/Three Heating Systems	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
SFH Cook Top Without Gas Oven and/or Broiler	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
SFH Range w/ Gas Cook top & Oven and/or Broiler	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
SFH Dryer - Stub & 220 Electric Plug - Customer Option	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
SFH Dryer Stub - No 220 Electric Plug - Gas Dryer Only	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
SFH Gas Log	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070	0.57070
Sch. G-6 Multi-Family Residential									
Basic Service Charge-Monthly	$ 9.70	$ 9.70	$ 9.70	$ 9.70	$ 9.70	$ 9.70	$ 9.70	$ 9.70	$ 9.70
Basic Service Charge Annual	$ 116.40	$ 116.40	$ 116.40	$ 116.40	$ 116.40	$ 116.40	$ 116.40	$ 116.40	$ 116.40
Space Heating - MFH Multi-Family Home	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343
MFH Water Heat- One Heating System	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343
MFH Cook Top Without Gas Oven and/or Broiler	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343
MFH Range w/ Gas Cook top & Oven and/or Broiler	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343
MFH Dryer - Stub & 220 Electric Plug - Customer Option	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343
MFH Dryer Stub - No 220 Electric Plug - Gas Dryer Only	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343
MFH Gas Log	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343	0.55343
Service Stub - Ft. - Per Cust. Standard @ Ft., Other Needs Justification	20	20	20	15	20	25	20	20	25
Service Stub-Cost/Ft (Co. Incurred + Pipeline Install. Standard) @	$ 8.62	$ 14.10	$ 8.55	$ 14.18	$ 10.00	$ 12.00	$ 9.38	$ 10.15	$ 10.00
Service Extension - Ft. - Per Cust. @ Ft, < Needs Justification	30	31	40	22	40	70	44	33	45
Service Ext. -Cost/Ft (Co. Incurred + Pipeline Install. Standard) @	$ 8.62	$ 14.10	$ 8.55	$ 14.18	$ 10.00	$ 12.00	$ 9.38	$ 10.15	$ 10.00
District Label	DISTRICT 32 VALLEY, ARIZONA	DISTRICT 34 BULLHEAD, ARIZONA	DISTRICT 36 TUCSON, ARIZONA	DISTRICT 42 PHOENIX, ARIZONA	DISTRICT 44 AJO, ARIZONA	DISTRICT 46 MOUNTAIN, ARIZONA	DISTRICT 47 SOUTHEAST, ARIZONA	DISTRICT 48 YUMA, ARIZONA	DISTRICT 49 PARKER/WICKENBURG, ARIZONA
Pressure Reinforcement - 3-Year Capital Plan 2006-2008	158	0	61	174	0	0	24	176	0

Parameters for General Service and Residential Margin Calculation	General Service G-25 Small	Medium	Large
Basic Service Charge	27.5	43.5	160
Commodity Rate	0.57059	0.37996	0.29084

SF Residential G-5			MF Residential G-6		
BSC-Monthly	$	10.70	BSC-Monthly	$	9.70
BSC-Annual	$	128.40	BSC-Annual	$	116.40
Comm Rate		0.57070	Comm Rate		0.55343

O & M Per New Residential Customer Addition [redacted]
O & M Per New Commercial Customer Addition

Standard Amounts

Exhibit No.___ (RAM-7)
SHEET 17 OF 23

Last Updated: 1/16/2008	**ICM Model Glossary of Terms**
Term	**Description**
A	
ACC	Arizona Corporation Commission - The regulatory agency responsible for utilities in Arizona
ACC Authorized Rates	The ACC rates that were approved and authorized for the current ICM Model.
ACC Authorized Level	Currently 8.40% which is the weighted Average Cost of Capital. See below
ADV. -100%	Customer refundable advance required.
Appliances	Any natural gas appliance used in the Model
Approach Main	The amount of main distribution pipe before entering a subdivision or project. Usually a large diameter pipe.
B	
Basic Service Charge	Basic Service Charge which is a monthly service charge regardless of the level of therms used.
BI	Budget Identification No. Subclassification of CapEx beyond the FERC Account
Blue Stake	The company contracted for line location services in Arizona. Used by all utilities.
Book Depreciation Rates	Authorized by the ACC to accomplish depreciation definition (See Depreciation)
Buildout	A term used to describe the rate of connections (buildout) on an annual basis for each project.
C	
Capital Expenditures-CapEx	Cost incurred to install pipe or other facilities and equipment. Have a useful life > 1 Yr.
CIAC	Contribution In Aid of Construction - A non-refundable amount collected by Southwest Gas Corporation for projects
Commerical-CSP	Indicates that a line item for commercial projects entered in the Model by Customer Service Planning.
Comm./KAM Service Cost	Indicates that a line item for commercial projects entered in the Model by Key Accounts Management.
Commodity Margin	Recovery of costs by applying a rate times the number of terms used.
Commodity Rate	Rate authorized by the ACC to apply to the customer's therm usage.
Cost and Residential Sales Input	A Tab (worksheet) in the Model for entering project costs and residential usage and buildout information.
CSP	Customer Service Planning
Customer Advance	An amount of refundable payment required by the Developer or Customer to proceed with a project.
D	
Demand Charge	Applies only to Customers using G-25TE Rate Schedule Used to recover fixed cost based on the customers peak usage.
Depreciation	Expensing a long term asset over the expected useful life
E-F	
ERTS	Encoder/Receiver/Transmitters. Electronic devices used on natural gas meters to provide meter reads for billing purposes.
G	
Gas Logs	Ceramic or other artificial logs used in gas fireplaces.
GRC	General Rate Case- Application to change rates subject to the ACC approval.
General Service Margin	The non-gas cost related funds received from service to non-Residential customers.
General Service Sales Input	The area(s) within the Model used to input non-residential information.
Goal Seek	A function of Excel used in the Model to calculate CIAC.
Gross Plant	Gross CapEx used to provide natural gas service to the Company's customers.
Gross Revenue Conversion Factor	The additional revenue required to provide recovery of $1 of a cost that is not deductible on either a state or federal tax return.

Last Updated: 1/16/2008	ICM Model Glossary of Terms
Term	**Description**
H	
High Pressure Dist Pipe	6 inche or greater diameter steel pipe that can be operated at high pressure.
I-J	
Incremental Cost	Capex and O&M that are the direct result of the addition of a new customer.
Incremental Investment	CapEx incurred as a direct result of adding a new customer.
Incremental Margin	Margin that results from the addition of a new customer.
Incremental Operat. & Maint.	Annual expenses that are the direct result of adding a new customer.
Income Avail. For Common	The amount that is left over after all expenses are paid . These funds are available to shareholder to be paid in either dividends or left invested in the company.
Income Tax	Federal and state tax based on the net income
Industrial Regulator Stations	Above ground facilities used to control the flow of gas from large diameter pipe to smaller diameter pipe.
Interest Expense	Funds required to compensate investors who provided money to the company to finance rate base.
Investment	Synominous with rate base.
K	
KAM	Key Accounts Management is a group of Service Planners who address the needs of large customers
KAM Customers	Those Southwest Gas customers represented and handled by Key Accounts Management.
L	
Large Diameter Mains	Pipe whose inside with is 4 inches or greater.
M	
Main	Gas pipe facities usually under a street or right of way that is used to carry gas to more than one customer.
Main CIAC	The amount of Contribution In Aid of Construction (Non-refundable amount) applied against Mains.
Margin	See Residential and General Service Margin
MEC Advances	Main Extension Contract Advances (Refundable)
Meter Set Assembly	Refers to the complete meter set assembly, including regulators and above ground pipe in front of the customers gas pipe. Used to measure the flow of gas to a home or business.
MFH	Multi-Family Home- Customers served subject to rate schedules G-6 Multi-Family Residential and G-1 Multi-family Low Income
N	
Net Cap Ex	Gross CapEx less Accumulated Depreciation. Represent the Company's net investment in gas facilites which are financed using debt, preferred securities and shareholder equity.
Net Income	Revenues less deductible expense the balance of which is subject to tax.
O	
O & M	Operations & Maintenance Exp.- Cost incurred that have benefit only in the current year
P-Q	
Pressure Reinforcement	Mains CapEx required to maintain pressure in the gas distribution System. Is required due to growth over a period of time.
Property Tax	State tax based on net investment in facilites.
R	
Rate Base	Gross CapEx to provide service less funds received from customers and other sources
Rate Base in Service	See above
Regulatory Return	Includes funds available to pay interes, preferred dividends and shareholders.
Regulator Stations	A regulation system built and utilized for reducing high pressure or stepping down pressure to normal high pressure in mains and services.
Residential Margin	Non-gas revenue from customers included in rate schedule g-5,G-6,G-10,G-11.
Return on Rate Base	After tax Net Income available to pay interest exp. and shareholders devided by rate base.

Last Updated: 1/16/2008	ICM Model Glossary of Terms
Term	**Description**
S	
Service CIAC	The amount of Contribution In Aid of Construction (Non-refundable amount) applied against service lines (on property service).
Service Comm./KAM	Commercial service line required for a project and coordinated by Key Accounts Management.
Service Extension	The amount of gas pipeline extended on property up to the gas meter.
Service Footage	The amount of service line footage required to serve a gas meter or meters on property.
Service Stub	A service line that connects to a main gas line (usually in a street or right of way) and extends to a property line in anticipation of a service line extension.
SFH	Single Family Home- Customers served subject to Rate Schedule G-5, Single Family Residential, G-10 Single Family Low Income Residential
Space Heating	A gas appliance used for heating a residence or non-residential unit.
Standard Amounts	Cost per foot, feet per customer and usage per appliance average experienced or calculated rather than a specific unique amount.
T	
Taxable Income	Revenues less deductible expense the balance of which is subject to tax.
Tax Rates	The rate of a tax levy by a Federal, State or municipality (Income tax or property tax)
TME	Twelve Months Ending (Period of time measured using 12 months of activity)
U-V	
Ultimate Purchaser	The first person that purchase the home for either rent or live.
Utility Inc.	
220 Volt Receptical (W 220)	Electrical receptical (plug) required to provide serve to an electric clothes dryer
W-Z	
Weighted Average Cost of Capital	The cost of funds needed to finance rate base. It is the ratio of the sources (debt, preferred and common equity) and their respective costs
WMIS	Work Management Information System. Used to provide cost information, appliance information and usage information for the ICM Model. Also houses the current ICM Model as an attachment and saved with each Work Order.
Work Order Description	A brief description in the Model for the project under consideration.
Work Order/Request No.	A number created by WMS or Plant Accounting for tracking a project.

	Release Notes For ICM Model
	Version: Production ICM Model 2/10/09
Note 1:	This current Model has undergone a number of cosmetic changes, primarily to the Model documentation. Comments have been added to individual cells where appropriate too describe the purpose of the specific cell. In addition, Notes have been added for ranges of cells to explain and describe the purpose of the a specific section and area of each worksheet. The overall purpose of the comments, notes and descriptions are to include documentation within the Model.
Note 2 :	The "Guidelines" tab has been enhanced to show the ICM Model Owner and the creation of Standard Practice 920.0 - Incremental Contribution Method (ICM) Model (Arizona).
Note 3:	The "Project Summary" and "3-Year Results" worksheets were eliminated from the Model and combined with other existing worksheets to streamline the Model. The "Project - Dep. & Rate Base" page now links to only one page, the "Project Cost Calculation" worksheet.
Note 4:	Calculations on worksheets have been reviewed and where appropriate, modified for accuracy purposes.
Note 5:	A new section has been added to the "Standard Amounts" worksheet below the Service Line average lengths and costs section.
Note 6:	Analyses were conducted for average consumptions resulting in changes to the "Standard Amounts" worksheet consumption section. Average Service Line estimates were also changed to reflect new averages.
Note 7:	A "Glossary of Terms" worksheet has been added towards the end of the Model to assist with defining terminology and descriptions.
Note 8:	A "Current Release Notes" worksheet has been added to document what changes have been made from the previous version to the current version of the Model.
Note 9:	Model Modification February 21, 2008
Note 10:	Revenue Requirements modified the model in order to move the input location for O&M per residential customer addition from Tab "6-Year Results" cell C-48 to Tab "Standard Amounts" cell B-50. The "text box" was change to note that C-48 was now a look-up cell to cell B-50. A new Text box was created for Tab Standard Amounts line 50.

	Release Notes For ICM Model
	Version: Production ICM Model 2/10/09
Note 11:	Revenue Requirements modified the model in order to move the input location for O&M per commercial customer addition from Tab "6-Year Results" cell C-49 to Tab "Standard Amounts" cell B-50. The "text box" was change to note that C-48 was now a look-up cell to cell B-51. A new Text box was created for Tab Standard Amounts line 51.
Note 12	Demand Planning updated appliance end-use estimates to reflect current usage patterns based on normalized use during the twelve months ended August 2007
Note 13	Revenue Requirements updated the average feet per service extension and the average cost per foot of service stub and extension based on the actual results for the three years ending 2007.
Note 14	Revenue Requirements updated the system reinforcement cost per customer by district based on actual results for years 2002 - 2007 adjusted for unusual activity.
Note 15	Revenue Requirements updated O&M per customer based on actual results for the 2007.
Note 16	Central Arizona Division pointed out that residual inputs were left in the previous version. Inputs such as customers, appliances and cost estimates were left in. This version has therms zeroed out.
Note 17	One physical change was made. The input cell for the project name was moved from the build out page to the Cost and Resi Sales Input page Cell A-3.
Note 18	Revenue Requirements made a mechanical change to Tab "Gen Serv Margin Summary" Line 32 Columns I through S to add line 14-19-24-30 instead of lines 15-20-25-31. This change was necessary to eliminate the double counting of commercial customers in the Tab "6-Years Results" O& M line 16.
Note 19	In accordance with Decision No. 70665, Revenue Requirements eliminated the tier structure for schedules
	(all usage is now billed at the same rate) G-5 and G-6 on the Standard Amounts page to allow for different
	rates for each of these schedules. Commodity rates and Basic Service charges were updated for
	Residential Schedules G-5 & G-6 as well as General Service schedule G-25.
Note 20	In accordance with Decision No. 70665, the appropriate rates were updated on the "ACC Authorized
	Rates" worksheet.
Note 21	The Cost and Resi Sales Input and Resid. Margin Summary worksheets were revised to accommodate
	the different rates for schedules G-5 and G-6. The SFH and MFH appliances are now represented
	individually to allow for calculations using different Commodity rates.
Note 22	A mechanical change was made to the property tax calculation on the "6-Year Results" worksheet (Ln 53,
	Columns E, G, I, K, M) calculation now uses the "End of Year Bal" (Ln 32) rather than the "Net Cap Ex"

	Release Notes For ICM Model Version: Production ICM Model 2/10/09
	balance (plant balance including customer advance) to calculate the property taxes.
Note 23	Analyses were conducted for average consumptions resulting in changes to the "Standard Amounts" worksheet consumption section; formulas were updated in cells B9:J10.
Note 24	Revenue Requirements updated O&M per customer based on actual results for the 2008.
Note 25	Analyses were conducted for meter equipment and installation costs resulting in changes to the "Cost and Resi Sales Input" worksheet.
Note 26	The "Target" was updated on the "Guidelines" worksheet to include the new rates reflected on the "ACC Authorized Rates" page.

EXHIBIT

A-10

IN THE MATTER OF

SOUTHWEST GAS CORPORATION

Docket No. G-01551A-10___

PREPARED DIRECT TESTIMONY

OF

THEODORE K. WOOD

ON BEHALF OF

SOUTHWEST GAS CORPORATION

NOVEMBER 12, 2010

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of
Prepared Direct Testimony
of
THEODORE K. WOOD

BEFORE THE ARIZONA CORPORATION COMMISSION

Prepared Direct Testimony
of
THEODORE K. WOOD

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Theodore K. Wood, and my business address is 5241 Spring Mountain Road, Las Vegas, Nevada 89150.

Q. 2 By whom are you employed and in what capacity?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or the Company). My title is Assistant Treasurer/Director of Financial Services.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I previously testified before the Arizona Corporation Commission (Commission), the California Public Utilities Commission (CPUC) and the Public Utilities Commission of Nevada (PUCN). I have also provided written testimony to the Federal Energy Regulatory Commission (FERC).

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I sponsor the Company's overall requested rate of return. Specifically, my direct testimony details the requested capital structure and the embedded cost of long-term debt used for determining the appropriate cost of capital for the Company's Arizona rate jurisdiction. In addition, I discuss the importance of the Company's overall rate of return on the Company's bond ratings and financial profile.

Q. 6 Please summarize your prepared direct testimony.

A. 6 My prepared direct testimony addresses the following key issues:

- The development of a fair value rate of return (FVROR) necessary for the Company to earn a fair return on its Arizona properties;
- A review of the Company's financial profile, including the Company's request for revenue decoupling and its requested FVROR and how these proposals are necessary to support and improve its financial profile and credit ratings. Ultimately, an improved financial profile and higher credit ratings will benefit both customers and investors.
- The Company's requested capital structure for ratemaking: The Company is requesting a capital structure composed of 52.3 percent common equity and 47.7 percent long-term debt. The requested capital structure is the Company's actual capital structure for the test period ended June 30, 2010.
- The development of the Company's embedded cost of long-term debt: For the test period ended June 30, 2010, the embedded cost of debt for the Company's Arizona jurisdiction is 8.34 percent.

<u>II. SOUTHWEST GAS' FAIR VALUE RATE OF RETURN</u>

Q. 7 Have you determined a reasonable rate of return necessary for Southwest Gas to earn a fair return on its Arizona distribution properties?

A. 7 Yes. An overall FVROR of 7.50 percent for the Arizona jurisdiction is reasonable in this proceeding and properly reflects the Company's level of business, financial, and regulatory risks. The FVROR was developed from the estimated weighted average cost of capital (WACC) for the original cost rate base (OCRB), summarized as follows:

Southwest Gas Corporation
Arizona Rate Jurisdiction

Component	Ratio	Cost	Weighted Cost
Long-Term Debt	47.70%	8.34%	3.98%
Common Equity	52.30%	11.00%	5.75%
Total	100.00%		9.73%

The resulting FVROR to be applied to the fair value rate base is 7.50 percent (the testimony of Company witness Robert Hevert details the methodology used to derive the FVROR).

Q. 8 Why is the proposed rate of return appropriate and necessary for Southwest Gas?

A. 8 This rate of return is necessary to maintain the Company's financial integrity, to allow the Company to attract new capital and to permit the Company's equity holders the opportunity to earn a fair and reasonable rate of return.

Moreover, this rate of return meets the standard of reasonableness established by the United States Supreme Court in Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia, 262 U.S. 679 (1923)(Bluefield):

> The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.

This rate of return also satisfies the comparability standard set by the Court in Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591 (1944)(Hope):

> . . . the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.

An explanation regarding the practical application of these two court rulings to a diversified utility such as Southwest Gas is appropriate.

The Company has, since the late 1950s, filed rate cases as a "diversified" utility. The multi-jurisdictional rate case filings are based on the fact that Southwest Gas, as a natural gas utility, serves three states with several different ratemaking jurisdictions. The Company requests only gas distribution utility required rates of return in all filings within each jurisdiction. The capital costs requested in this filing are utility-only costs. Southwest Gas' practices assure that the costs of utility operations attributable to each of its jurisdictions are properly insulated from the impact of any non-utility activities.

In summary, Southwest Gas' requested rate of return in this proceeding is fair to both customers and shareholders and properly reflects the risks and returns appropriate for its gas distribution properties.

III. SOUTHWEST GAS' FINANCIAL PROFILE

A. Credit Ratings

Q. 9 What is a credit rating?

A. 9 A credit rating reflects a rating agency's opinion of the creditworthiness of a particular company, security, or obligation. Credit ratings play an important role in capital markets by providing an effective and objective tool for market participants to evaluate and assess credit risk. As such, the Company's credit ratings are a key factor in determining the required yield on the Company's securities and bank facilities, and the amount and terms of available unsecured trade credit. Credit rating agencies use both quantitative and qualitative information in the process of developing a credit rating.

Q. 10 How important is the regulatory environment in the determination of a credit rating for a public utility?

A. 10 For a public utility, credit rating agencies regard regulation as a significant factor in determining a utility's financial performance, as regulation defines the environment in which the utility operates. The importance of regulation on the credit rating for a utility is reflected in the following statement from Standard & Poor's (S&P):

> Based on Standard & Poor's Ratings Services' experience in rating U.S. investor-owned utilities, we believe that the fundamental regulatory environment can be one of the most important factors we analyze when assigning utility credit ratings.[1]

Similarly, Moody's Investor Services (Moody's) states:

> For a regulated utility, the predictability and supportiveness of the regulatory framework in which it operates is a key credit consideration and the one that differentiates the industry from most other corporate sectors.[2]

Q. 11 What are the Company's current long-term unsecured credit ratings?

A. 11 Currently, Southwest Gas' long-term unsecured credit ratings are "BBB" from Fitch, Inc. (Fitch), "Baa2" from Moody's, and "BBB" from S&P. The ratings are two levels above the threshold for an investment grade rating.

In addition, credit rating agencies provide a ratings outlook, which is an assessment of the direction of the credit rating over the intermediate to longer term. The current rating outlook for Southwest Gas provided by both Fitch and S&P is "positive," while Moody's is "stable." The latest available credit agency reports are included in Exhibit No.__(TKW-1).

Q. 12 Have there been any changes in the credit ratings since the decision in the Company's last Arizona general rate case, Docket No. G-01551A-07-0504?

A. 12 Yes. On April 22, 2009, S&P upgraded the Company's unsecured bond rating

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1 Standard & Poor's Direct, *Credit FAQ: Standard & Poor's Assessments Of Regulatory Climates For U.S Investor-Owned Utilities,* November 25, 2008, p. 2.

2 Moody's Investor Services, Moody's Rating Methodology, *Regulated Electric and Gas Utilities,* August 2009, p. 6.

to "BBB" from "BBB-" and on May 27, 2010, Moody's upgraded the Company's unsecured bond rating to "Baa2" from "Baa3."

Q. 13 Please discuss the rationale for the more recent bond rating upgrade from Moody's.

A. 13 Moody's rationale for the upgrade was stated as follows:

> 'The upgrade follows improvements in Southwest's cash flow credit metrics which we believe will be sustained for the foreseeable future,' said Kevin Rose, Vice President & Senior Analyst. 'Even in the face of an economic downturn in Southwest's primary service territories, financial results for 2009 were generally robust,' Rose added. The improvement comes primarily as a result of recent rate relief in all of Southwest's regulatory jurisdictions, and the company's continued effort to minimize costs.[3]

In addition, Moody's discussed the importance of the recent improvement in regulatory support the Company has received:

> ...we recognize some signs of improvement in Southwest's regulatory environment. In Nevada, the PUCN approved the company's request for the implementation of a decoupling mechanism in its April 2009 general rate case, pursuant to the decoupling legislation approved in 2008. Furthermore, the ACC has conducted a series of workshops in 2009 and 2010 to evaluate the possibility of implementing decoupling mechanism in Arizona, and is currently reviewing related proposals submitted by utilities in its jurisdiction, including Southwest.[4]

The key point in Moody's rationale is the improvement in the Company's regulatory environment due to authorized decoupling in Nevada and the prospect for approval of a decoupling mechanism in Arizona.

Q. 14 Did S&P also change its rating outlook for Southwest Gas from "stable" to "positive"?

A. 14 Yes. With respect to the change in rating outlook, S&P stated the following:

3 Moody's Investor Services, *Rating Action: Moody's upgrades Southwest Gas Corp. – Sr. Unsecured to Baa2*, May 27, 2010, p. 1.

4 Moody's Investor Services, *Credit Opinion: Southwest Gas Corporation*, May 27, 2010, p. 2.

> The positive outlook reflects our expectation that the company will maintain its current financial performance, supported by stable cash flows from its utility operations. We expect FFO to debt of 20% to 25% and debt to capital of about 55%. The outlook assumes adequate rate relief and expectations for continued, gradual reductions in regulatory risks associated with the company's Arizona service territory.
>
> We could raise the rating if credit metrics remain stable and the company's management of its regulatory risk continues to result in a gradually improving rate environment. Conversely, an outlook revision to stable could result if regulatory risks increase in Arizona, the company displays an increased reliance on debt to finance capital spending, or the company experiences significant reductions in customer usage without adequate regulatory protections.[5]

The positive outlook expects the Company's financial condition to be maintained, based on the assumption of adequate rate relief and improved regulatory support.

Q. 15 How does the lack of revenue decoupling affect the Company's financial profile?

A. 15 Because a large portion of the Company's distribution costs are fixed, and cost recovery is based on rates using volumetric charges, weather and declining consumption per customer introduce additional risk to returns and cash flows. Such risk is of particular concern because, unlike other risk factors, it is beyond management's control. The variability due to weather creates symmetric risk, while declining consumption per customer creates asymmetric risk. Asymmetric risk caused by declining consumption per customer and utilization of a volumetric rate design has been recognized by the rating agencies. For instance, Moody's stated the following:

> In attempting to grapple with the conservation issue, LDCs are in fact having to dispel the notion that their fixed charges should be recovered from volumetric sales of gas.

5 Standard & Poor's, *Southwest Gas Corp.*, April 22, 2010, p. 4.

> As the fixed charges appear year in and year out regardless of gas usage, the volumetric approach to cost recovery for operating a gas distribution system is a faulty equation which needs to be rectified in ratemaking. It would appear, therefore, that unless and until this anomaly is corrected, the LDC would lack the necessary tools with which to earn its allowed rate of return.[6]

Q. 16 How will the decoupling provision proposed by the Company in this proceeding help improve the Company's financial profile?

A. 16 In August 2010, the Commission issued a Notice of Proposed Rulemaking on Gas Energy Efficiency, which contained an energy efficiency requirement for Southwest Gas to achieve a cumulative energy savings of six percent by December 2020. Given the adoption of policies to promote energy efficiency, the Company's proposed decoupling provision will mitigate that additional risk, along with its existing exposure to volumetric risk, and provide an improved opportunity to recover Commission authorized fixed costs and achieve its authorized rate of return (ROR). Over time, this will help to strengthen the Company's financial metrics and improve its credit ratings. Improved credit ratings will in turn likely lead to an improvement in the Company's debt costs, which will benefit customers in the long term as these improved terms are reflected in rates.

Q. 17 Would the Commission's approval of the proposed decoupling provision be recognized as a positive factor for the Company's credit rating?

A. 17 Yes. Rating agencies would view Commission approval of a decoupling provision as a positive factor. Nevertheless, it is important to point out that decoupling through a balancing account, which is part of the decoupling provision, does not eliminate cash flow risk associated with variations in sales volumes. One of the most critical elements of the rating agencies' analysis is

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6 Moody's Investor Services, Moody's Special Comment, *Local Gas Distribution Companies: Update on Revenue Decoupling And Implications for Credit Ratings*, June 2006, p. 4.

based on analyzing cash flows. As a result, ratings agencies will evaluate the decoupling provision based on its impacts on cash flows.

Q. 18 What is the Company's target credit rating?

A. 18 Management's long-run goal is to achieve an "A" credit rating. The short-run goal, at a minimum, is to maintain an investment grade credit rating.

The Company believes that obtaining an "A" bond rating would provide the Company with a greater amount of financial flexibility. The Company would be able to attract capital at reasonable prices during both normal and turbulent market conditions, which have been recently experienced. In addition, an "A" bond rating would be in a range that has been generally found to minimize the long-run average pre-tax cost of capital paid by customers.[7]

Q. 19 Please explain how moving from a BBB/Baa2 to an "A" bond rating would reduce the long-run average pre-tax cost of capital being paid by customers.

A. 19 It is important to point out that any reduction obtained is on a relative basis, as the absolute cost of capital is a function of capital market conditions at a particular moment in time. An upgrade in the bond rating from a BBB/Baa2 to an "A" would be reflected in lower long-run average capital costs such as: (1) lower cost rates for existing debt; (2) lower cost rates for refinancing maturing debt and issuing new debt; and (3) a lower required return on common equity, all else equal, due to a lower level of investment risk.

The reduction in the long-run average cost of capital for each of these capital components is briefly discussed as follows.

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7 Roger A. Morin, *New Regulatory Finance*, (Arlington, Virginia: Public Utilities Reports, Inc., 2006), pp. 505-15, demonstrates using simulation analysis and under a wide range of cost of common equity models that an "A" bond rating generally results in the lowest pre-tax cost of capital for electric utilities. In a study conducted by the National Economic Research Associates, "Capital Structure, Interest Coverage, & Optimal Credit Ratings," 1999, for UK water utilities also finds that an "A" bond rating is optimal.

(1) Existing Debt - If the Company's bond ratings were upgraded to an "A" bond rating, approximately $382 million of its existing long-term debt would be re-priced, resulting in an annual decrease in interest expense of approximately $800,000.

(2) Refinancing and New Debt – The 10-year historical average spread between a "BBB" and an "A" utility bond is approximately 42 basis points.[8] The embedded cost of debt would be reduced, on a relative basis, over time as maturing debt is refinanced and incremental new debt is issued. The actual cost reduction achieved will depend on capital market conditions at the time of issuance and the benefits of the lower costs would be reflected in future general rate case proceedings.

(3) Required Return on Common Equity – As discussed infra and as also discussed by Company witness Robert Hevert, Southwest Gas currently has a higher level of investment risk relative to the proxy group companies used to estimate the cost of common equity. This higher relative investment risk requires a higher required rate of return on common equity. Achieving an "A" bond rating would indicate a lower level of relative investment risk, and would be reflected in a lower required return on common equity relative to the proxy group (all else equal) in future general rate case proceedings.

B. Relative Investment Risk

Q. 20 How does Southwest Gas' credit ratings and credit metrics compare to the

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8 This is the average spread between the Moody's A Utility Bond Index and the Moody's Baa Utility Bond Index for the time period June 30, 2000 to June 30, 2010.

proxy group of natural gas distribution companies?

A. 20 The comparative average bond ratings and credit metrics are shown below:

Description	SWG Actual	Proxy Group of Eight LDCs
Bond Ratings[1]:		
S&P	BBB	A
Moody's	Baa2	A3
Credit Metrics[2]:		
Return on capital	7.6%	9.6%
EBIT Interest Coverage	2.4	3.9
EBITDA Interest Coverage	4.6	5.2
Debt/Debt plus equity	57.4%	54.1%

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[1] Exhibit No.__(TKW-2).
[2] Three-year (2007-2009) median ratios as reported by S&P.

While Southwest Gas has improved its bond ratings, the ratings are approximately two (Moody's) to three (S&P) notches below the average rating of the proxy group. The Company's three-year average return on capital and interest coverage ratios are all lower than the proxy group measures, indicating higher financial risk.

Q. 21 In terms of relative investment risk, what is Southwest Gas' risk position in comparison to the proxy group of natural gas distribution companies?

A. 21 The *Value Line Investment Survey* (Value Line) Safety rank can be used as relative measure of investment risk. Value Line ranks stocks for Safety by analyzing the total risk of a stock compared to the approximately 1,700 stocks in the Value Line universe. Value Line ranks each stock from 1 (highest) to 5 (lowest). Each of the stocks tracked in Value Line is ranked in relationship to each other, from 1 (highest) to 5 (lowest). Value Line defines Safety as a quality rank, not a performance rank, and stocks ranked 1 and 2 are most suitable for conservative investors, while those ranked 4 and 5 will be more volatile. The major influences on a stock's Safety rank are the company's financial strength, as measured by balance sheet and financial ratios, and the stability of its price over the past five years. Southwest Gas' Value Line Safety rank is 3, while the average for the proxy group is 1.88 (see Exhibit No.__(TKW-3)). This measure indicates higher relative investment risk for Southwest Gas.

C. Capital Attraction

Q. 22 Given the Company's operating environment, what are the key factors that will enable the Company to continue to attract the capital necessary to meet its ongoing capital requirements?

A. 22 Generally, investors will choose between alternative investments based on the risk and reward characteristics of the available investment opportunities. Consequently, the Company must compete with other utilities and alternative investment opportunities in fully competitive capital markets to attract equity capital.

For Southwest Gas to successfully attract equity capital, it must demonstrate an ability to achieve a competitive return on that equity capital. As a regulated natural gas utility, the Company's overall authorized net income available for its shareholders is ultimately determined by the authorized rate base in each jurisdiction multiplied by the applicable authorized equity ratio in the capital structure and the applicable authorized cost of equity.

Company witness Robert Hevert has provided testimony in this proceeding regarding a fair and reasonable cost of common equity, considering the Company's specific risk factors and costs of common equity for proxy groups of "similar" natural gas utilities.

Q. 23 How does the overall rate of return balance the interests of both customers and investors of the Company?

A. 23 The Company's financial health is, over time, important in determining the rates it must charge its customers. The Company's credit ratings are significantly influenced by the financial strength of the Company. The Company's cost of debt is, in large part, determined by the Company's credit ratings. All other things being equal, with higher credit ratings, the Company's cost of capital and the rates it charges its customers would be lower.

It is also important that investors be given the opportunity to earn a rate of return commensurate with the level of risk associated with their investment. Investor confidence in Southwest Gas is important for both its existing shareholders and for the Company's future ability to issue additional common equity. If the overall allowed rate of return is set below the Company's actual cost of capital, the Company may be unable to attract sufficient financing at reasonable rates to continue to fund the required capital expenditures and maintain its quality of customer service. The Company's requested overall rate of return will help sustain the Company's improved financial condition and support continued improvement. In the long-run, this will benefit both the Company's customers and investors.

With the regulatory support of the Commission in approving the Company's proposed overall FVROR of 7.50 percent, based on an 11.00 percent return on common equity, Southwest Gas can continue to build on the substantial progress it has made in improving its financial profile and bond ratings. Such improvement benefits Southwest Gas' customers by reducing the long-run average capital costs embedded in customer rates.

IV. RECOMMENDED CAPITAL STRUCTURE

Q. 24 What is Southwest Gas' current Commission-authorized ratemaking capital structure and overall rate of return?

A. 24 In the Company's last general rate case (Decision No. 70665 in Docket No. G-01551A-07-0504, dated December 24, 2008), the Commission adopted the following capital structure, capital costs and overall rate of return:

Southwest Gas Corporation
ACC Authorized Rate of Return
Decision No. 70665

Component	Ratio	Cost	Weighted Cost
Long-Term Debt	52.08%	7.96%	4.15%
Preferred Equity	4.48%	8.20%	0.37%
Common Equity	43.44%	10.00%	4.34%
Total	100.00%		8.86%

The authorized rate of return on fair value rate base was 7.02 percent.

Q. 25 What is the Company's recommended capital structure in this proceeding for ratemaking purposes?

A. 25 The Company is requesting its actual capital structure at the end of test period, June 30, 2010, composed of 52.3 percent common equity and 47.7 percent long-term debt.

Q. 26 Please compare the Company's requested capital structure to its capital structure at the end of the previous test period, April 30, 2007.

A. 26 The Company's actual capital structure at April 30, 2007 and June 30, 2010[9] are as follows:

9 The ratemaking capital structure is the Company's gas segment permanent capital structure, which includes common equity, preferred securities and long-term debt. Short-term debt is excluded as short-term debt is used primarily to finance working capital and PGA receivable balances, and not long-term rate base assets.

SOUTHWEST GAS' ACTUAL RATEMAKING CAPITAL STRUCTURE
($ IN MILLIONS)

Capital	Percent of Capital 4/30/2007	6/30/2010	Change
Long-Term Debt	52.7%	47.7%	-5.0%
Preferred Equity	4.4%	0.0%	-4.4%
Common Equity	42.9%	52.3%	9.4%
Total	100.0%	100.0%	

During this 38-month period, the Company increased its common equity by approximately $205 million and reduced outstanding long-term debt and preferred securities by $219 million. As a result, the common equity ratio improved by 9.4 percentage points.

Q. 27 How does Southwest Gas' book value capital structure compare to a representative group of Southwest Gas' peers?

A. 27 The Southwest Gas actual and the average permanent capital structures of the proxy group of eight LDCs used by Mr. Hevert in his testimony to estimate the cost of common equity are as follows:

Permanent Capital Structure Ratios

Type of Capital	SWG Actual	Proxy Group of Eight LDCs[1] June 30, 2010	5-Year Avg.
Long-Term Debt	47.7%	40.4%	43.5%
Common Equity	52.3%	59.6%	56.5%
Total	100.0%	100.0%	100.0%

[1] Five-year (2005–2009) average permanent capital structure of a proxy group of eight local gas distribution companies included in R. Hevert's testimony. See Exhibit No.___(TKW-4), Sheet 1 of 9.

Southwest Gas' actual capital structure contains more leverage when compared to the average capital structure of the proxy group of local gas distribution companies included in this table.

V. EMBEDDED COST OF LONG-TERM DEBT

Q. 28 Have you determined the test period embedded cost rate for long-term debt capital?

A. 28 Yes. Southwest Gas' cost rate for long-term debt is 8.34 percent. This rate is summarized on line 1, column (c), of Schedule D-1, Sheet 1 of 2. Schedule D-2, Sheets 1 through 4, contains the development of the long-term debt cost rate. The cost of long-term debt is comprised of the cost of fixed-rate debentures and fixed-rate medium-term notes. At the end of the current test period, June 30, 2010, the Company had no debt outstanding under the variable-rate term facility.

Q. 29 Does the Company anticipate changes in the cost of long-term debt during the twelve-month period following the current test period?

A. 29 Yes. In February 2011, the Company has $200 million of maturing long-term debt, which will be refinanced. By February 2011, the Company intends to issue $250 million of new debentures (including at least $125 million in December 2010) to provide funding for the maturing obligation and a portion of the redeemed Preferred Securities. In March 2010, the Company redeemed the $100 million 7.70% Preferred Securities at par. The Company has a refinancing plan, but specific aspects remain uncertain, making it difficult at the time of preparing this testimony to project the impact to the cost of long-term debt. The Company anticipates the refinancing will reduce the cost of long-term debt and can provide an update of the cost of long-term debt during the course of the proceeding – which will likely result in a lower long-term cost of debt than what was included in Southwest Gas' last rate case application.

Q. 30 Please describe the development of the cost rates of the debentures and notes.

A. 30 The Company had three outstanding debenture and note issues, totaling $475 million of gross principal, at the end of the test year (June 30, 2010). The debentures and notes had a weighted average cost of 8.30 percent, as shown on line 4, column (e), of Schedule D-2, Sheet 2 of 4.

Q. 31 Please describe the cost rate of the medium-term notes.

A. 31 The Company established a $150 million medium-term note program in November 1997. The name is somewhat of a misnomer as medium-term notes can be issued with maturities ranging from nine months to 30 years. The Company issued its entire medium-term note program and had six outstanding medium-term note issues totaling $82.5 million of gross principal at June 30, 2010. The medium-term notes had a weighted average cost of 7.75 percent, as shown on line 11, column (e), of Schedule D-2, Sheet 2 of 4.

Q. 32 How are the effective cost rates of debentures, notes, and medium-term notes calculated?

A. 32 The effective cost rates of debentures, notes, and medium-term notes are calculated through the use of the yield-to-maturity (YTM) or effective interest rate method.

Q. 33 Please describe the YTM method.

A. 33 The YTM method is based on an internal rate of return calculation, which takes into account the actual cash flows of each debt security. Specifically, the Company receives a cash inflow at the debt's issuance, consisting of the face value less any associated issuance expenses and debt discount. The Company's cash outflows consist of interest payments and principal repayments. The effective rate is the percentage rate that discounts those cash outflows to the net cash inflow the Company receives at issuance. Once the effective rate is calculated, it is then multiplied by the net proceeds (i.e., the principal amount outstanding less any unamortized discounts) to determine the total expense per payment period for each issue. The weighted average cost is then determined by weighting the effective cost of each issue by the current net proceeds amount. When used for ratemaking, the YTM method results in an effective cost that remains constant over the life of the debt security. The calculations for the effective cost of debentures, notes, and medium-term notes are shown in Exhibit No.__(TKW-5).

Q. 34 Please describe and discuss the development of the cost rate for the variable-rate term facility debt.

A. 34 The Company has a five-year (May 2007 – May 2012) $300 million revolving credit facility. In addition, the Company has a $50 million uncommitted F-2 commercial paper program, supported by the revolving credit facility. The Company continues to view $150 million of the facility as a permanent intermediate-term component of its debt portfolio. Accordingly, the Company has classified it as long-term debt. Southwest Gas continues to use the remaining $150 million of the facility to fund recurring, seasonal working capital needs.

At the end of the test period, the Company had no outstanding term facility balance. The amount reported in Schedule D-2 of approximately negative $238,000 represents the unamortized debt expenses incurred to establish the facility. The annual amortization expense includes an annual fee and amortization of debt expenses incurred to establish the facility. Given there was no outstanding principal at the end of the test period, the variable rate debt was reflected as zero on Schedule D-1.

Q. 35 Why are the Clark County and Big Bear Industrial Development Revenue Bonds (IDRBs) excluded in calculating the cost of long-term debt?

A. 35 Southwest Gas issued IDRBs in two of its rate jurisdictions. The IDRB issues and applicable rate jurisdictions are as follows: (1) the Clark County, Nevada

IDRBs (1993 Series A, 1999 Series A, C & D, 2003 Series A, C, D & E, 2004 Series A & B, 2005 Series A, 2006 Series A, 2008 Series A and 2009 Series A) for its Southern Nevada rate jurisdiction; and (2) the City of Big Bear, California IDRBs (1993 Series A) for its Southern California rate jurisdiction. As reflected in the IDRB indentures and financing agreements, the proceeds from the issuance of this type of debt are restricted to funding qualified construction expenditures for additions and improvements in the specific distribution systems to which the IDRBs relate. In addition, there are strict Internal Revenue Service (IRS) rules which mandate that the benefits of the tax-exempt, lower cost IDRBs must accrue to customers in the specific jurisdiction to which the IDRBs apply. Deviation from the requirements of this IRS ruling could result in the loss of the IDRB tax-exempt status, which would, in turn, cause the Company to refinance its debt at a much higher cost.

Q. 36 How have this and other regulatory Commissions treated the cost of Southwest Gas' IDRBs in past regulatory proceedings?

A. 36 Southwest Gas has historically excluded the IDRBs from the cost of debt calculation in all regulatory jurisdictions, except for the specific jurisdictions (Southern Nevada for Clark County IDRBs and Southern California for City of Big Bear IDRBs), to which the relevant IDRBs apply. This Commission, the PUCN, the CPUC, and the FERC have accepted this treatment for IDRBs in past regulatory proceedings.

Q. 37 Does this conclude your prepared direct testimony?

A. 37 Yes.

SUMMARY OF QUALIFICATIONS
THEODORE K. WOOD

I graduated from the University of Nevada, Reno (UNR) in 1985 with a Bachelor of Science degree with a major in agricultural economics. In 1989, I earned a Master of Science degree from UNR in agricultural economics with a minor in finance. I have attained the professional designations of Chartered Financial Analyst (CFA), Certified Rate of Return Analyst (CRRA), Certified Management Accountant (CMA), Certified in Financial Management (CFM), and Certified Treasury Professional (CTP). I am a member of the Institute of Management Accountants, the CFA Institute, Association for Financial Professionals, Financial Management Association, and the Society of Regulatory and Utility Financial Analysts.

From 1985 to 1988, I was employed as a research associate in the Department of Agricultural Economics at UNR in Reno, Nevada. My primary role was to assist with ongoing research projects in the Department including secondary data collection, statistical analysis, FORTRAN programming, and the development of microcomputer spreadsheets for farm management decision analysis.

In 1989, I was employed by First Interstate Bank of Nevada in Reno, Nevada, as a financial analyst in the Finance Department. My duties entailed maintenance of the general ledger system, creation of monthly management and financial reports, and special projects.

From 1990 to 1992, I was employed as a planning analyst with Valley Bank of Nevada, in Las Vegas, Nevada, in the Planning Department. My primary responsibilities included preparation of the annual budget, quarterly budget variance analysis, supporting the Asset/Liability Committee of the bank, and other financial analyses.

From 1992 to 1994, I was employed by PriMerit Bank, FSB, then a wholly-owned subsidiary of Southwest, as a Senior Financial Analyst in the Budget and Forecasting

Department. My primary responsibilities included creation and maintenance of a microcomputer-based budgeting system, preparation of the annual budget, monthly budget variance analysis, product profitability analysis, and other special projects.

In 1994, I accepted a Senior Financial Analyst position in the Treasury Services Department of Southwest. I was promoted to Supervisor of the Treasury Services Department in May 1997, Manager in June 2000, Senior Manager in May 2005, and Assistant Treasurer/ Director of Financial Services in December 2009. My responsibilities include directing the Company's treasury and corporate planning functions, as well as the representing the Company in various regulatory proceedings in its ratemaking jurisdictions concerning regulatory finance issues.

BEFORE THE ARIZONA CORPORATION COMMISSION
Docket No. G-01551A-10___

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to the Financial Supporting Exhibits
of
THEODORE K. WOOD

STANDARD
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Global Credit Portal
RatingsDirect®

October 18, 2010

Summary:
Southwest Gas Corp.

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Table Of Contents

Summary:
Southwest Gas Corp.

Credit Rating: BBB/Positive/--

Rationale

The ratings on Las Vegas-based natural gas local distributor Southwest Gas Corp. reflect an excellent business risk profile and a significant financial risk profile. Standard & Poor's Ratings Services bases the ratings on the consolidated credit profiles of its natural gas operations segment (about 90% of operating income) and its construction services business, Northern Pipeline Construction Co. (NPL; 10%).

Southwest Gas's excellent business risk profile reflects:

- A low-risk monopoly gas distribution business.
- A supportive regulatory environment in California and Nevada.
- A large, stable residential and commercial customer base.
- Healthy, but somewhat muted, customer growth prospects in Arizona (about 55% of customers and operating margin), Nevada (about 35%), and California (about 10%).
- Strong internal cash generation and substantial liquidity position, and ready access to the capital markets.

In our view, the following factors temper the company's business profile:

- Improved, but still challenging, regulatory environment in Arizona.
- Absence of natural gas storage facilities in Arizona and southern Nevada.
- Limited geographic service territory.
- Ownership of a small, unregulated construction and maintenance business.

The Arizona Corporation Commission (ACC), the Public Utilities Commission of Nevada (PUCN), and the California Public Utilities Commission each regulate Southwest Gas. Each regulatory commission provides the company with various cost-recovery mechanisms, including purchase gas adjustment mechanisms, a margin tracker balancing account in California, which mitigates margin volatility due to weather and other usage variations. In Nevada, Southwest Gas can use declining block rates to mitigate the affect of weather variation. However, we view regulatory oversight in Arizona as less supportive of credit than other jurisdictions due to the absence of mechanisms which mitigate the effect of weather and rate design that relates solely to gas throughput. This type of rate design exposes the company to reduced cash flows as volumes decline related to conservation. The approval of decoupling mechanism, which the company requested in its rate filing, is critical to the improvement in Arizona's overall regulatory environment, and to protect the company from underrecoveries during warmer weather.

Slowing customer growth, reduced throughput per customer, and rate design improvements were the primary reasons for the company's recent rate filings. While Southwest Gas's annual customer growth was about 5% per year from 2002 through 2006, growth since 2007 has averaged less than 1% per year and the company projects net growth will remain sluggish (1% or less) for 2010 as high foreclosure rates and recessionary conditions persist throughout its service territories. Despite strong historical customer growth statistics, annual total residential and light commercial consumption has nevertheless dropped by more than 1% per year since 2000 largely due to conservation efforts, making rate design a key credit driver for the company.

Effective November 2009, the PUCN granted a revenue increase of $17.6 million and an allowed return on equity (ROE) of 10.15% for the southern Nevada territory and a revenue decrease of $500,000 and an allowed ROE of 10.15% for northern Nevada. The company had requested a total increase of $27.8 million in Nevada. In addition to supporting customer conservation efforts, the decision also authorized the company to implement decoupling in line with PUCN's recently established rules.

Effective Dec. 1, 2008, the ACC granted a revenue increase of $33.5 million and an allowed ROE of 10%, compared with the company's request for an increase of $50.2 million and an allowed ROE of 11.25%. Regulators did not approve requests for a decoupling mechanism, which separates the utility's margins and cash flow from commodity sales and encourages conservation, or a weather normalization clause, which allows the company to adjust customers' bills during the winter heating season to reduce variations in margin recovery due to fluctuations from average temperatures. However, we expect Southwest Gas to request similar enhanced recovery mechanisms in future rate cases.

Southwest Gas's nonregulated maintenance and construction subsidiary, NPL, is not currently a significant rating factor. Our view is supported by the majority of the costs related to NPL's contracts are supplied by its customers and about 20% of NPL's revenues come from Southwest Gas's regulated gas operations. Nevertheless, NPL has reported reduced revenues and earnings related to general economic conditions and the slowdown in residential housing.

Southwest Gas has an aggressive financial risk profile, with bondholder protection measures that are relatively strong for the rating. As of June 30, 2010, total debt, including operating leases and tax-affected pensions and post-retirement obligations, was about $1.25 billion, with debt to capital of 51%, an improvement from the 58% reported at year-end 2008 and almost 60% at year-end 2007. For the 12 months ended June 30, 2010, the company reported funds from operations (FFO) to total debt of 26% and FFO interest coverage of almost 5x. We expect the company to generate FFO to total debt in the low 20% area and debt to capital of about 55%.

Liquidity

Under Standard & Poor's corporate liquidity methodology, we consider Southwest Gas's consolidated liquidity to be 'adequate'. (See "Standard & Poor's Standardizes Liquidity Descriptors For Global Corporate Issuers," published July 2, 2010 on RatingsDirect).

The company's projected sources of liquidity consist of modest cash balances, operating cash flow, and available bank lines. Projected uses of cash include maintenance and significant discretionary capital expenditures, the purchase of natural gas, manageable debt maturities, and dividends. Including peak borrowings for the purchase of natural gas inventories, which peak in the winter months, we forecast cash sources to exceed uses by about 1.2x over the next year. The company has announced plans to issue $250 million of new debt by February 2011, including at least $125 million in December 2010. Financing plans also include the issuance of $200 million of debt in March 2012 to refinance a maturity of $200 million due at that time. For the 12 months ended June 30, 2010, Southwest Gas reported cash from operations of $415 million with capital expenditures of $195 million. Capital expenditures for 2010 are forecast to be $200 million with an additional $370 million planned for 2011-2012.

In our view, Southwest Gas's liquidity position also benefits from its ability to absorb high-impact, low-probability events with limited need for refinancing; its flexibility to lower capital spending or sell assets; its sound bank relationships; and its generally prudent risk management. Companies in the utility sector have a proven track record of successfully accessing the capital markets, even during very challenging market conditions such as those most recently witnessed in late 2008 and early 2009.

Southwest Gas is comfortably in compliance with its requirements for debt to capital to be below 70%. At June 30, 2010, reported debt to capital was 49%.

Outlook

The positive outlook reflects our expectation that the company will maintain its current financial performance, supported by stable cash flows from its utility operations. We expect FFO to debt of 20% to 25% and debt to capital of about 55%. The outlook assumes adequate rate relief and expectations for continued, gradual reductions in regulatory risks associated with the company's Arizona service territory.

We could raise the rating if credit metrics remain stable and the company's management of its regulatory risk continues to result in a gradually improving rate environment. Conversely, an outlook revision to stable could result if regulatory risks increase in Arizona, the company displays an increased reliance on debt to finance capital spending, or the company experiences significant reductions in customer usage without adequate regulatory protections. These factors deteriorate financial performance such that the company sustains FFO to debt below 20% or debt to capital begins to approach 60%, which would not be consistent with a higher rating.

Related Criteria And Research

Criteria: Key Credit Factors: Business And Financial Risks In the Investor-Owned Utilities Industry, published Nov. 26, 2008.

MOODY'S
INVESTORS SERVICE

Credit Opinion: Southwest Gas Corporation

Global Credit Research - 27 May 2010

Las Vegas, Nevada, United States

Ratings

Category	Moody's Rating
Outlook	Stable
Senior Unsecured	Baa2
Preferred Shelf	(P)Ba1

Contacts

Analyst	Phone
Kevin G. Rose/New York	212.553.0389
William L. Hess/New York	212.553.3837

Key Indicators

[1]Southwest Gas Corporation

	1Q10 LTM	2009	2008	2007
(CFO Pre-W/C + Interest) / Interest Expense	4.2x	4.2x	3.8x	3.7x
(CFO Pre-W/C) / Debt	22.0%	20.5%	18.8%	17.7%
(CFO Pre-W/C - Dividends) / Debt	19.1%	18.0%	16.6%	15.6%
Debt / Book Capitalization	48.2%	51.6%	55.3%	56.5%

[1] All ratios calculated in accordance with the Regulated Electric and Gas Utilities Rating Methodology using Moody's standard adjustments

Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.

Opinion

Rating Drivers

Generally low business risk given dominance of regulated gas distribution operations

Cautiously optimistic about signs of improvements in historically challenging regulatory environment

Timely recovery of costs via PGA mechanisms

Market diversity and high reliance on residential and commercial customers stabilize cash flows

Moderate capital expenditure plan eases future financing needs

Credit metrics appropriate for the rating

Corporate Profile

Southwest Gas Corporation (Southwest: Baa2 senior unsecured, stable) is primarily a local natural gas distribution company (LDC), which purchases, transports and distributes natural gas to about 1.8 million customers. Major parts of the company's service territory include Phoenix and Tucson, Arizona; Las Vegas, Nevada; and the Lake Tahoe and San Bernardino County areas in California. The LDC operation represents approximately 90% of the company's consolidated business, with the balance derived from Northern Pipeline Construction Company (NPL), a significant but relatively small wholly owned unregulated subsidiary that operates as a full-service underground piping contractor. NPL typically provides utility companies with trenching and installation, replacement and maintenance services for energy distribution systems and conducts operations in about 17 major markets nationwide. The LDC operations are regulated by the Arizona Corporation Commission (ACC), the Public Utilities Commission of Nevada (PUCN), and the California Public Utilities Commission (CPUC).

Recent Developments

On May 27, 2010, Moody's upgraded the senior unsecured rating of Southwest to Baa2 from Baa3, with a stable rating outlook.

SUMMARY RATING RATIONALE

Southwest's Baa2 senior unsecured rating is primarily driven by the generally low business risk associated with LDC utility operations, which are complemented by modest-sized energy related unregulated activities. The rating also takes into account the historically challenging regulatory environment that has shown signs of improvement, primarily in addressing more timely recovery of variable costs of service and compensating for uncontrollable effects of weather and customer conservation. The rating also reflects Southwest's diverse jurisdiction mix and its strong market position in those states. Furthermore, the rating considers Southwest's credit metrics that are appropriate for the rating, and recognizes that the company's need for external financing is expected to remain moderate, with modestly lower capital expenditures planned in near to medium term

DETAILED RATING CONSIDERATIONS

Generally low business risk given dominance of regulated gas distribution operations

Southwest's rating reflects its generally low business risk profile, given that the majority of its operations are in regulated gas distribution. In 2009, the LDC operation generated approximately 91% of the company's consolidated net income, and approximately 85% of the consolidated revenues. Due to the regulated nature of the business, its cash flow tends to be relatively more stable and predictable than that of unregulated companies, a positive from a credit perspective.

Cautiously optimistic about signs of improvements in historically challenging regulatory environment

The below average level of regulatory supportiveness Southwest received compared to many of its peers in other U.S. jurisdictions has been a key constraint to its rating. Among reasons for the weak score on regulatory support is the significant regulatory lag the company has experienced, especially in regard to the Arizona jurisdiction, where it is not unusual for the ACC to take a year or longer to decide a rate case, and its requests to improve rate designs through the implementation of weather normalization and decoupling mechanisms in Arizona have not been approved to date.

Nevertheless, we recognize some signs of improvement in Southwest's regulatory environment. In Nevada, the PUCN approved the company's request for the implementation of a decoupling mechanism in its April 2009 general rate case, pursuant to the decoupling legislation approved in 2008. Furthermore, the ACC has conducted a series of workshops in 2009 and 2010 to evaluate the possibility of implementing decoupling mechanism in Arizona, and is currently reviewing related proposals submitted by utilities in its jurisdiction, including Southwest. The final ACC decision is expected sometime later this year.

Within the framework of Moody's August 2009 Rating Methodology for Regulated Electric and Gas Utilities (the Methodology), Southwest maps to a rating factor in the Baa range for Factor 1: Regulatory Framework. This mapping incorporates our views of the generally supportive frameworks in the Nevada and California jurisdictions, tempered by our view of the less supportive Arizona jurisdiction, despite near term prospects for decoupling in that state.

Timely recovery of costs via purchased gas adjustment (PGA) mechanisms

Despite Southwest's current lack of decoupling and weather normalization mechanisms in Arizona, its largest jurisdiction, Southwest benefits from PGA mechanisms in all of its jurisdictions, through which the company can change rates up or down as the cost of purchased gas changes. Moody's generally views these mechanisms as credit positive, as they ensure timely recovery of gas costs. The rates are adjusted on monthly basis for the changes in purchased gas costs in Arizona and California, while Nevada employs quarterly adjustments. At March 31, 2010, the company had an over-collection position of approximately $93 million.

In order to help minimize variable cost exposure for natural gas supplies, Southwest generally locks in about half of its annual supply needs through fixed-priced or fixed-for-floating swap contracts. For the 2009/2010 heating season, contracts contained in the fixed-price portion ranged in price from about $4 to $10 per dekatherm.

Within the framework of the Methodology, Southwest maps to a rating factor in the Baa range for Factor 2: Ability to Recover Costs and Earn Returns. This mapping incorporates our favorable view of regulatory mechanisms in California and more recently in Nevada, along with cautious optimism that the ACC will ultimately support some form of decoupling and/or weather normalization.

Market diversity and high reliance on residential and commercial customers stabilize cash flows

Southwest benefits from its multi-jurisdictional utility operations and the relatively solid competitive position it maintains in each of its three markets. In 2009, 55% of operating margins were earned in Arizona, 34% in Nevada, and 11% in California. Moreover, Southwest is the largest natural gas provider in Arizona and Nevada, its two largest jurisdictions. Such diversification and market competitiveness are credit-positive, as they can diminish concentration risk and ensure that any adverse development specific to one part of its operations does not create a rapid deterioration in the company's overall credit profile.

In addition, Southwest's high reliance on residential and commercial customers further improves its overall credit profile. At December 31, 2009, over 99% of Southwest's customers were in the residential and small commercial classes, and in 2009, these customer groups contributed approximately 86% of the company's operating margins. Due to its small exposure to large industrial customers, Southwest can effectively mitigate any material risks in dealing with those customers' business downturns in this challenging economic environment.

Given its relatively diverse markets and competitive position within them, within the framework of the Methodology, Southwest maps to a rating factor in the A range for Factor 3: Diversification.

Moderate capital expenditure plan eases future financing needs

For the next three years from 2010 to 2012, Southwest plans to spend approximately $570 million in its planned capital expenditure program, approximately $200 million of which is expected to be incurred in 2010. This moderate plan, compared to the expenditures incurred in last three years ending 2009 (approximately $860 million), will most likely enable Southwest to cover the majority of the planned expenditures with internally generated cash flows, easing the company's future needs to periodically issue debt and common equity to fund its capital projects.

Credit Metrics appropriate for the rating

Southwest's key credit metrics have improved over the last couple of years, as various rate relief mechanisms from regulatory filings have resulted in higher cash flows, and allowed the company to reduce its overall level of debt. Specifically, the ratio of cash flows from operation before changes in working capital (CFO Pre-WC) to debt, as calculated in accordance with Moody's standard analytical adjustments, improved to over 20% in 2009 from around 16% in 2006, while the CFO Pre-WC to interest metric improved to above 4x in 2009 from 3.5x in 2006. On a prospective basis, we expect Southwest to maintain its metrics comparable to these levels, albeit slightly lower, primarily due to the effects that the economic downturn and unseasonable weather are having on demand. Our expectations are premised on supportive regulatory treatment in future proceedings (especially in Arizona and Nevada), continued cost management, and the prudent execution of capital projects and associated financing.

Liquidity

Southwest maintains a sufficient liquidity profile with external liquidity sources supplementing its operating cash flows to help meet short-term working capital needs. During the 12 months ended March 31, 2010, Southwest's cash flow from operations of approximately $420 million was more than sufficient to cover its capital expenditures of around $200 million, $100 million of trust preferred security redemption, and $43 million of common dividends. Going forward, we anticipate that cash flow from operations should cover the majority of capital expenditures and dividends, with any shortfalls to be covered by a moderate level of debt and equity mix consistent with keeping the balance sheet ratios close to current levels. We further recognize that Southwest intends to pre-fund for its next debt maturity obligation, a $200 million 8.375% series of note due February 2011, by issuing new debentures in December 2010.

As of March 31, 2010, the company's liquidity included unrestricted cash and equivalents of $39 million and $255 million of unused capacity under its $300 million committed senior unsecured bank revolver that expires in May 2012. The company has consistently designated $150 million of the facility as part of its sources of long-term debt financing. As of March 31, 2010, $45 million was drawn under the long-term portion of the revolver while no borrowings were outstanding under the portion of the facility used for short-term working capital needs. The revolver does not contain an ongoing material adverse change clause for each borrowing, but it does contain two financial covenants; a maximum allowed debt to capital of 70% and a minimum required net worth of $475 million plus 25% of the net proceeds from any equity issuance from and after December 31, 2003. Southwest had ample headroom under both covenants as of March 31, 2010.

Given its adequate liquidity position, within the framework of the Methodology, Southwest maps to a rating factor in the Baa range for Factor 4: Liquidity.

Rating Outlook

The stable outlook for Southwest reflects our expectations that it can maintain credit metrics comparable to the current level, while continuing to pursue changes to improve rate design in Arizona, and conservatively fund capital expenditures in a manner that is consistent with the rating. Nevertheless, the lingering effects from the economic downturn and unseasonable weather on demand and overall financial results in the absence of decoupling mechanism in Arizona remain a modest credit concern.

What Could Change the Rating - Up

The rating or outlook could improve if Southwest's regulatory environment improves significantly (for example, the approval by Arizona to implement weather normalization and revenue decoupling mechanisms). The rating could also be revised upward if the company can achieve CFO Pre-WC coverage of interest and debt at or above 4x and 22%, respectively, for a sustained period.

What Could Change the Rating - Down

A downgrade is unlikely in the near to medium term. The rating could move downward, however, if the company moves toward higher leverage; or if it experiences significant earnings and cash flow volatility due to weather variation or consumer conservation efforts in the absence of weather normalization and/or decoupling mechanisms in Arizona; such that there is a sustained deterioration of financial metrics, for example, demonstrated by the CFO Pre-WC to interest and debt to falling to below 3.3x and 16%, respectively.

Rating Factors

Southwest Gas Corporation

Regulated Electric and Gas Utilities	Aaa	Aa	A	Baa	Ba	B
Factor 1: Regulatory Framework (25%)				X		
Factor 2: Ability to Recover Costs and Earn Returns (25%)				X		
Factor 3: Diversification (10%)						
a) Market Position (5%)			X			
b) Generation and Fuel Diversity (5%)				NA		
Factor 4: Financial Strength, Liquidity & Financial Metrics (40%)						
a) Liquidity (10%)				X		
b) CFO pre-WC + Interest / Ineterest (7.5%) (3yr Avg)				X		
c) CFO pre-WC / Debt (7.5%) (3yr Avg)				X		
d) CFO pre-WC - Dividends / Debt (7.5%) (3yr Avg)				X		
e) Debt / Capitalization or Debt / RAV (7.5%) (3yr Avg)				X		
Rating:						
a) Methodology Implied Senior Unsecured Rating				**Baa2**		

b) Actual Senior Unsecured Rating				Baa2			

MOODY'S
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FITCH AFFIRMS SOUTHWEST GAS CORP.; OUTLOOK TO POSITIVE

Fitch Ratings-New York-01 June 2010: Fitch Ratings has affirmed Southwest Gas Corp.'s (SWX) ratings as follows:

--Long-term Issuer Default Rating (IDR) at 'BBB';
--Senior Unsecured Rating at 'BBB';
--Short Term IDR at 'F2';
--Commercial Paper at 'F2'.

The Rating Outlook for the above securities has been revised to Positive from Stable.

SWX's ratings reflect the operating, regulatory, and financial characteristics associated with SWX's dynamic service territory. In recent years the company has made timely general rate case filings in all three geographic operating jurisdictions. Growth in SWX's service territories has slowed significantly as a result of the recessionary economy. Economic conditions have had a dampening effect on SWX's pipeline construction subsidiary, Northern Pipeline Construction Co., which provides roughly 10% of net income. However, marginal utility customer growth coupled with recent rate increases, as a result of SWX's rate cases in Arizona, Nevada, California and with FERC, should allow SWX's credit measures to remain stable over the next three years. During this time, Fitch expects EBITDA/Interest coverage and Debt to EBITDA to average approximately 5.0 times (x) and 3.0x, respectively. Fitch expects SWX customer growth to remain flat to slightly positive over the next several years as the economy slowly recovers.

A push toward more progressive rate structures within SWX's operating jurisdictions has helped to lower some of the revenue volatility associated with the effects of weather and conservation. With decoupling mechanisms in place in Nevada and California a significant portion of SWX's operating margin and cash flow should experience more stability. Fitch generally views the implementation of rate mechanisms that reduce cash flow volatility favorably; more predictable cash flow will translate to lower business risk for SWX.

The Positive Outlook is reflective of improvements in SWX's credit metrics relative to Fitch's prior forecasts and past performance and the expectation that these improvements will continue. The majority of SWX's cash flow and operating income is being generated by SWX's gas distribution operations, which should provide for continued earnings and cash flow stability. With purchased gas adjustment mechanisms in place SWX's local gas distribution company operations have generated sustainable cash flow during times of natural gas price volatility. While SWX's credit measures can be affected, at least in the short term, by regulatory lag associated with gas supply acquisitions, SWX has become more adept at timely management of its purchased gas adjustments (PGA) balances. SWX is allowed monthly PGA adjustments in California and Arizona. In Nevada, SWX moved to a quarterly PGA from an annual filing at the start of 2006, which has contributed to more timely recovery. The recent approval of a more progressive decoupled rate structure in NV, in addition to the decoupled rate structure already in place in CA, should help provide additional cash flow and earnings stability. Fitch believes that the approval of a decoupling rate mechanism in AZ would further lower business risk and help stabilize revenue and cash flow from the effects of weather and conservation. However, Fitch notes that any positive or negative rating action on SWX is not contingent on the implementation of decoupled rates in AZ.

SWX's credit measures could be affected over the short term due to the recovery lag associated with gas supply acquisitions. Gas costs that are incurred in excess of amounts embedded in customer rates are generally deferred and recovered under its PGAs. The company uses its bank lines for borrowings to fund gas purchases. In periods of under-recovery, there may be some near-term negative effect on coverage ratios and capital structure.

Applicable criteria available on Fitch's web site at 'www.fitchratings.com' include:

--'Corporate Rating Methodology' Nov. 24, 2009;
--'Credit Rating Guidelines for Regulated Utility Companies' July 31, 2007;
--'U.S. Power and Gas Comparative Operating Risk (COR) Evaluation and Financial Guidelines' Aug. 22, 2007;
--'Utilities Sector Notching and Recovery Ratings', March 16, 2010.

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Additional information is available at 'www.fitchratings.com'.

SOUTHWEST GAS CORPORATION
PROXY GROUP OF VALUE LINE GAS DISTRIBUTION COMPANIES
BOND RATINGS

Line No.	Symbol (a)	Company (b)	Moody's[1] (c)	Numerical Weight (d)	S&P[1] (e)	Numerical Weight (f)	Line No.
1	AGL	AGL Resources Inc.	A3	7	A-	7	1
2	ATO	Atmos Energy Corp.	Baa2	9	BBB+	8	2
3	LG	Laclede Gas Co.	Baa1	8	A	6	3
4	NJR	New Jersey Natural Gas Co.	Aa3	4	A	6	4
5	GAS	Nicor Gas Co.	A2	6	AA	3	5
6	NWN	Northwest Natural Gas Co.	A3	7	A+	5	6
7	PNY	Piedmont Natural Gas Co. Inc.	A3	7	A	6	7
8	SJI	South Jersey Gas Co.	Baa1	8	BBB+	8	8
10		Proxy Group Average	A3	7	A	6	10
11	SWX	Southwest Gas Corporation	Baa2	9	BBB	9	11

[1] Source: Bloomberg

SOUTHWEST GAS CORPORATION
NUMERICAL WEIGHT FOR BOND RATINGS

Moody's Bond Rating	S&P Bond Rating	Numerical Weight
Aaa	AAA	1
Aa1	AA+	2
Aa2	AA	3
Aa3	AA-	4
A1	A+	5
A2	A	6
A3	A-	7
Baa1	BBB+	8
Baa2	BBB	9
Baa3	BBB-	10
Ba1	BB+	11
Ba2	BB	12
Ba3	BB-	13

SOUTHWEST GAS CORPORATION
PROXY GROUP OF VALUE LINE GAS DISTRIBUTION COMPANIES
CREDIT RATIOS[1]

Line No.	Company	Return on capital (%)	EBIT interest coverage (x)	EBITDA interest coverage (x)	FFO/debt (%)	Free oper. cash flow/debt (%)	Debt/EBITDA (x)	Debt/ Total Capital (%)	Line No.
		--Average of past three fiscal years (2007-2009)--							
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
1	AGL Resources Inc.	10.7	3.8	5.0	19.8	2.1	3.7	57.7	1
2	Atmos Energy Corp.	9.5	2.7	4.0	21.1	5.5	3.7	54.5	2
3	Laclede Gas Co.	7.2	2.3	3.3	14.1	4.7	4.9	60.0	3
4	New Jersey Natural Gas Co.	9.6	4.6	6.0	25.7	10.1	3.1	45.4	4
5	Nicor Gas Co.	6.8	3.1	6.6	22.5	1.0	3.4	55.7	5
6	Northwest Natural Gas Co.	10.5	3.9	5.5	19.7	5.0	3.2	53.7	6
7	Piedmont Natural Gas Co. Inc.	10.9	4.0	5.0	22.7	7.2	3.5	53.7	7
8	South Jersey Gas Co.	8.8	4.2	5.4	20.0	4.4	3.6	49.8	8
9	Mean	9.3	3.6	5.1	20.7	5.0	3.6	53.8	9
10	Median	9.6	3.9	5.2	20.6	4.9	3.6	54.1	10
11	Southwest Gas Corporation	7.6	2.4	4.6	21.2	5.4	3.5	57.4	11

[1] Source: Standard & Poor's, *CreditStats: Gas Utilities--U.S.*, August 20, 2010

SOUTHWEST GAS CORPORATION
PROXY GROUP - GAS DISTRIBUTION COMPANIES
VALUE LINE INVESTMENT SURVEY SAFETY RANK

Line No.	Company (a)	Value Line Safety[1] (b)	Line No.
1	AGL Resources Inc.	2.00	1
2	Atmos Energy Corp.	2.00	2
3	Laclede Gas Co.	2.00	3
4	New Jersey Natural Gas Co.	1.00	4
5	Nicor Gas Co.	3.00	5
6	Northwest Natural Gas Co.	1.00	6
7	Piedmont Natural Gas Co. Inc.	2.00	7
8	South Jersey Gas Co.	2.00	8
10	**Proxy Group Average**	**1.88**	10
11	Southwest Gas Corporation	3.00	11

Notes:
[1] Source: Value Line Investment Survey, September 10, 2010.

Definitions:
Value Line Safety Rank - is a measure of total investment risk of a stock, with a rank of "1" being highest safety and "5" being lowest safety.

PROXY GROUP OF NATURAL GAS DISTRIBUTION COMPANIES
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	5-Year Average[1]	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
	Capital Structure Ratios								
	Based on Total Permanent Capital								
1	Long-Term Debt	40.45%	42.96%	42.61%	43.68%	45.83%	45.91%	43.48%	1
2	Preferred Stock	0.00%	0.00%	0.01%	0.00%	0.01%	0.02%	0.00%	2
3	Common Equity	59.55%	57.04%	57.38%	56.32%	54.15%	54.07%	56.51%	3
4	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	4
	Based on Total Capital								
5	Total Debt, Including Short Term	47.69%	48.63%	47.74%	48.91%	51.22%	49.62%	50.98%	5
6	Preferred Stock	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	6
7	Common Equity	52.31%	51.37%	52.26%	51.09%	48.77%	50.37%	49.02%	7
8	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	8
	Capital Structure Ratios (Market Value)								
	Based on Total Permanent Capital								
9	Long-Term Debt	29.50%	32.30%	29.23%	29.70%	31.60%	30.34%	30.42%	9
10	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	10
11	Common Equity	70.50%	67.70%	70.77%	70.30%	68.39%	69.65%	69.57%	11
12	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	12
13	Total Debt, Including Short Term	35.77%	37.32%	33.50%	34.17%	36.34%	33.35%	36.92%	13
14	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	14
15	Common Equity	64.23%	62.68%	66.50%	65.83%	63.65%	66.63%	63.08%	15
16	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	16

[1] 5-year quarterly average ratio for the period ended June 30, 2010

AGL RESOURCES (AGL)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)	($ in millions)						
1	LT Borrowings	$ 1,553	$ 1,675	$ 1,637	$ 1,544	$ 1,632	$ 1,621	1
2	Preferred Equity	-	-	-	-	-	-	2
3	Common Equity + Minority Interest	1,827	1,759	1,720	1,712	1,607	1,489	3
4	Total Permanent Capital	3,380	3,434	3,357	3,256	3,239	3,110	4
5	Short Term Debt	694	418	513	339	455	172	5
6	Total Capital Employed	$ 4,074	$ 3,852	$ 3,870	$ 3,595	$ 3,694	$ 3,282	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	45.95%	48.78%	48.76%	47.42%	50.39%	52.12%	7
8	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8
9	Common Equity	54.05%	51.22%	51.24%	52.58%	49.61%	47.88%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	55.15%	54.34%	55.56%	52.38%	56.50%	54.63%	11
12	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
13	Common Equity	44.85%	45.66%	44.44%	47.62%	43.50%	45.37%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	1.54	1.42	1.57	1.88	1.89	2.05	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 1,553	$ 1,675	$ 1,637	$ 1,544	$ 1,632	$ 1,621	16
17	Preferred Equity	-	-	-	-	-	-	17
18	Common Equity + Minority Interest	2,814	2,498	2,706	3,225	3,034	3,053	18
18	Total Permanent Capital	4,367	4,173	4,343	4,769	4,666	4,674	18
20	Short Term Debt	694	418	513	339	455	172	20
21	Total Capital Employed	$ 5,061	$ 4,591	$ 4,856	$ 5,108	$ 5,121	$ 4,846	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	35.57%	40.14%	37.69%	32.38%	34.98%	34.68%	22
23	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23
24	Common Equity	64.43%	59.86%	62.31%	67.62%	65.02%	65.32%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	44.40%	45.59%	44.28%	36.87%	40.76%	37.00%	26
26	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26
28	Common Equity	55.60%	54.41%	55.72%	63.13%	59.24%	63.00%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

ATMOS ENERGY CORP (ATO)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)	($ in millions)						
1	LT Borrowings	$ 1,810	$ 2,169	$ 2,120	$ 2,127	$ 2,181	$ 2,184	1
2	Preferred Equity	-	-	-	-	-	-	2
3	Common Equity + Minority Interest	2,314	2,192	2,105	1,988	1,665	1,616	3
4	Total Permanent Capital	4,123	4,361	4,225	4,115	3,845	3,800	4
5	Short Term Debt	360	0	114	304	300	3	5
6	Total Capital Employed	$ 4,483	$ 4,361	$ 4,339	$ 4,419	$ 4,146	$ 3,803	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	43.89%	49.75%	50.17%	51.68%	56.71%	57.47%	7
8	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8
9	Common Equity	56.11%	50.25%	49.83%	48.32%	43.29%	42.53%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	48.39%	49.75%	51.48%	55.01%	59.85%	57.51%	11
12	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
13	Common Equity	51.61%	50.25%	48.52%	44.99%	40.15%	42.49%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	1.09	1.05	1.19	1.35	1.37	1.43	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 1,810	$ 2,169	$ 2,120	$ 2,127	$ 2,181	$ 2,184	16
17	Preferred Equity	-	-	-	-	-	-	17
18	Common Equity + Minority Interest	2,522	2,301	2,497	2,679	2,276	2,311	18
18	Total Permanent Capital	4,332	4,470	4,617	4,805	4,456	4,495	18
20	Short Term Debt	360	0	114	304	300	3	20
21	Total Capital Employed	$ 4,692	$ 4,471	$ 4,731	$ 5,109	$ 4,757	$ 4,498	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	41.78%	48.53%	45.91%	44.25%	48.93%	48.58%	22
23	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23
24	Common Equity	58.22%	51.47%	54.09%	55.75%	51.07%	51.42%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	46.25%	48.53%	47.22%	47.57%	52.16%	48.62%	26
26	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26
28	Common Equity	53.75%	51.47%	52.78%	52.43%	47.84%	51.38%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

LACLEDE GROUP (LG)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)			($ in millions)				
1	LT Borrowings	$ 364	$ 389	$ 309	$ 356	$ 395	$ 340	1
2	Preferred Equity	-	-	0	-	1	1	2
3	Common Equity + Minority Interest	547	531	483	435	407	384	3
4	Total Permanent Capital	911	920	792	791	803	726	4
5	Short Term Debt	101	133	59	142	123	88	5
6	Total Capital Employed	$ 1,012	$ 1,053	$ 851	$ 933	$ 926	$ 813	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	39.99%	42.30%	39.01%	45.02%	49.24%	46.92%	7
8	Preferred Stock	0.00%	0.00%	0.06%	0.00%	0.10%	0.13%	8
9	Common Equity	60.01%	57.70%	60.93%	54.98%	50.66%	52.95%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	45.99%	49.59%	43.22%	53.40%	56.00%	52.63%	11
12	Preferred Stock	0.00%	0.00%	0.05%	0.00%	0.08%	0.12%	12
13	Common Equity	54.01%	50.41%	56.72%	46.60%	43.92%	47.25%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	1.35	1.38	1.84	1.58	1.80	1.75	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 364	$ 389	$ 309	$ 356	$ 395	$ 340	16
17	Preferred Equity	-	-	0	-	1	1	17
18	Common Equity + Minority Interest	738	733	887	689	733	671	18
18	Total Permanent Capital	1,102	1,122	1,196	1,045	1,129	1,012	18
20	Short Term Debt	101	133	59	142	123	88	20
21	Total Capital Employed	$ 1,203	$ 1,255	$ 1,255	$ 1,187	$ 1,253	$ 1,100	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	33.05%	34.69%	25.85%	34.08%	35.02%	33.64%	22
23	Preferred Stock	0.00%	0.00%	0.04%	0.00%	0.07%	0.09%	23
24	Common Equity	66.95%	65.31%	74.12%	65.92%	64.91%	66.27%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	38.68%	41.62%	29.32%	41.98%	41.42%	38.92%	26
26	Preferred Stock	0.00%	0.00%	0.04%	0.00%	0.06%	0.09%	26
28	Common Equity	61.32%	58.38%	70.65%	58.02%	58.52%	60.99%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

NEW JERSEY RESOURCES CORP (NJR)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)	($ in millions)						
1	LT Borrowings	$ 435	$ 458	$ 482	$ 334	$ 334	$ 318	1
2	Preferred Equity	-	-	-	-	-	-	2
3	Common Equity + Minority Interest	741	721	658	672	595	518	3
4	Total Permanent Capital	1,176	1,179	1,139	1,006	929	836	4
5	Short Term Debt	192	55	145	231	157	197	5
6	Total Capital Employed	$ 1,368	$ 1,234	$ 1,284	$ 1,237	$ 1,086	$ 1,033	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	36.98%	38.82%	42.27%	33.25%	35.92%	38.04%	7
8	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8
9	Common Equity	63.02%	61.18%	57.73%	66.75%	64.08%	61.96%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	45.81%	41.53%	48.79%	45.73%	45.18%	49.85%	11
12	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
13	Common Equity	54.19%	58.47%	51.21%	54.27%	54.82%	50.15%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	1.96	2.15	2.08	2.13	2.21	2.56	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 435	$ 458	$ 482	$ 334	$ 334	$ 318	16
17	Preferred Equity	-	-	-	-	-	-	17
18	Common Equity + Minority Interest	1,453	1,551	1,370	1,430	1,313	1,327	18
18	Total Permanent Capital	1,888	2,008	1,852	1,764	1,647	1,645	18
20	Short Term Debt	192	55	145	231	157	197	20
21	Total Capital Employed	$ 2,079	$ 2,063	$ 1,997	$ 1,996	$ 1,804	$ 1,842	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	23.04%	22.79%	26.01%	18.96%	20.27%	19.34%	22
23	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23
24	Common Equity	76.96%	77.21%	73.99%	81.04%	79.73%	80.66%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	30.13%	24.83%	31.38%	28.35%	27.21%	27.97%	26
26	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26
28	Common Equity	69.87%	75.17%	68.62%	71.65%	72.79%	72.03%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

NICOR GAS (GAS)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)			($ in millions)				
1	LT Borrowings	$ 423	$ 499	$ 374	$ 498	$ 471	$ 497	1
2	Preferred Equity	-	-	-	-	-	-	2
3	Common Equity + Minority Interest	1,088	1,006	984	916	828	790	3
4	Total Permanent Capital	1,512	1,505	1,358	1,415	1,299	1,287	4
5	Short Term Debt	182	227	143	-	50	-	5
6	Total Capital Employed	$ 1,694	$ 1,732	$ 1,501	$ 1,415	$ 1,349	$ 1,287	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	28.01%	33.15%	27.51%	35.22%	36.25%	38.62%	7
8	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8
9	Common Equity	71.99%	66.85%	72.49%	64.78%	63.75%	61.38%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	35.75%	41.91%	34.41%	35.22%	38.61%	38.62%	11
12	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
13	Common Equity	64.25%	58.09%	65.59%	64.78%	61.39%	61.38%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	1.69	1.56	1.95	2.11	2.23	2.30	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 423	$ 499	$ 374	$ 498	$ 471	$ 497	16
17	Preferred Equity	-	-	-	-	-	-	17
18	Common Equity + Minority Interest	1,839	1,566	1,923	1,936	1,848	1,818	18
18	Total Permanent Capital	2,262	2,064	2,296	2,435	2,319	2,314	18
20	Short Term Debt	182	227	143	-	50	-	20
21	Total Capital Employed	$ 2,444	$ 2,291	$ 2,439	$ 2,435	$ 2,369	$ 2,314	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	18.72%	24.16%	16.26%	20.46%	20.30%	21.47%	22
23	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23
24	Common Equity	81.28%	75.84%	83.74%	79.54%	79.70%	78.53%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	24.77%	31.67%	21.17%	20.46%	21.98%	21.47%	26
26	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26
28	Common Equity	75.23%	68.33%	78.83%	79.54%	78.02%	78.53%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

NORTHWEST NATURAL GAS (NWN)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)	($ in millions)						
1	LT Borrowings	$ 592	$ 587	$ 512	$ 517	$ 492	$ 522	1
2	Preferred Equity	-	-	-	-	-	-	2
3	Common Equity + Minority Interest	691	657	624	610	611	592	3
4	Total Permanent Capital	1,282	1,244	1,136	1,127	1,103	1,113	4
5	Short Term Debt	152	91	73	42	85	27	5
6	Total Capital Employed	$ 1,434	$ 1,335	$ 1,209	$ 1,169	$ 1,188	$ 1,141	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	46.14%	47.18%	45.05%	45.86%	44.61%	46.84%	7
8	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8
9	Common Equity	53.86%	52.82%	54.95%	54.14%	55.39%	53.16%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	51.84%	50.76%	48.36%	47.81%	48.59%	48.11%	11
12	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
13	Common Equity	48.16%	49.24%	51.64%	52.19%	51.41%	51.89%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	1.68	1.79	1.96	2.03	1.67	1.78	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 592	$ 587	$ 512	$ 517	$ 492	$ 522	16
17	Preferred Equity	-	-	-	-	-	-	17
18	Common Equity + Minority Interest	1,161	1,176	1,223	1,239	1,020	1,054	18
18	Total Permanent Capital	1,752	1,763	1,735	1,756	1,512	1,576	18
20	Short Term Debt	152	91	73	42	85	27	20
21	Total Capital Employed	$ 1,904	$ 1,854	$ 1,808	$ 1,798	$ 1,597	$ 1,603	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	33.77%	33.29%	29.51%	29.45%	32.54%	33.09%	22
23	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23
24	Common Equity	66.23%	66.71%	70.49%	70.55%	67.46%	66.91%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	39.05%	36.55%	32.35%	31.10%	36.14%	34.23%	26
26	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26
28	Common Equity	60.95%	63.45%	67.65%	68.90%	63.86%	65.77%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

PIEDMONT NATURAL GAS (PNY)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)			($ in millions)				
1	LT Borrowings	$ 732	$ 793	$ 825	$ 825	$ 825	$ 625	1
2	Preferred Equity	-	-	-	-	-	-	2
3	Common Equity + Minority Interest	989	948	922	900	902	905	3
4	Total Permanent Capital	1,721	1,741	1,746	1,725	1,727	1,530	4
5	Short Term Debt	182	288	170	148	103	119	5
6	Total Capital Employed	$ 1,903	$ 2,028	$ 1,916	$ 1,873	$ 1,830	$ 1,649	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	42.54%	45.55%	47.21%	47.81%	47.77%	40.84%	7
8	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8
9	Common Equity	57.46%	54.45%	52.79%	52.19%	52.23%	59.16%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	48.03%	53.26%	51.88%	51.92%	50.70%	45.11%	11
12	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
13	Common Equity	51.97%	46.74%	48.12%	48.08%	49.30%	54.89%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	1.94	1.90	2.13	1.91	2.15	2.09	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 732	$ 793	$ 825	$ 825	$ 825	$ 625	16
17	Preferred Equity	-	-	-	-	-	-	17
18	Common Equity + Minority Interest	1,918	1,801	1,964	1,717	1,939	1,895	18
18	Total Permanent Capital	2,650	2,594	2,788	2,542	2,764	2,520	18
20	Short Term Debt	182	288	170	148	103	119	20
21	Total Capital Employed	$ 2,832	$ 2,881	$ 2,958	$ 2,690	$ 2,867	$ 2,639	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	27.62%	30.57%	29.57%	32.45%	29.84%	24.80%	22
23	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23
24	Common Equity	72.38%	69.43%	70.43%	67.55%	70.16%	75.20%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	32.27%	37.49%	33.61%	36.16%	32.35%	28.19%	26
26	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26
28	Common Equity	67.73%	62.51%	66.39%	63.84%	67.65%	71.81%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

SOUTH JERSEY INDUSTRIES (SJI)
CAPITALIZATION STATISTICS
2005-2010

Line No.		At June 30, 2010	2009	2008	2007	2006	2005	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
	Amount of Capital Employed (Book Value)			($ in millions)				
1	LT Borrowings	$ 371	$ 333	$ 333	$ 358	$ 358	$ 319	1
2	Preferred Equity	-	-	-	-	-	-	2
3	Common Equity + Minority Interest	555	540	481	471	424	368	3
4	Total Permanent Capital	926	872	814	829	782	687	4
5	Short Term Debt	195	164	114	109	147	56	5
6	Total Capital Employed	$ 1,121	$ 1,036	$ 928	$ 938	$ 929	$ 743	6
	Capital Structure Ratios (Book Value)							
	Based on Total Permanent Capital							
7	Long-Term Debt	40.11%	38.14%	40.90%	43.17%	45.78%	46.45%	7
8	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8
9	Common Equity	59.89%	61.86%	59.10%	56.83%	54.22%	53.55%	9
10	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	10
	Based on Total Capital							
11	Total Debt, Including Short Term	50.51%	47.92%	48.18%	49.78%	54.35%	50.48%	11
12	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
13	Common Equity	49.49%	52.08%	51.82%	50.22%	45.65%	49.52%	13
14	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	14
15	Market/Book Ratio	2.31	1.93	2.32	2.22	1.89	2.33	15
	Amount of Capital Employed (Market Value)							
16	LT Borrowings	$ 371	$ 333	$ 333	$ 358	$ 358	$ 319	16
17	Preferred Equity	-	-	-	-	-	-	17
18	Common Equity + Minority Interest	1,281	1,041	1,114	1,044	800	857	18
18	Total Permanent Capital	1,652	1,374	1,447	1,402	1,158	1,176	18
20	Short Term Debt	195	164	114	109	147	56	20
21	Total Capital Employed	$ 1,847	$ 1,538	$ 1,561	$ 1,511	$ 1,305	$ 1,232	21
	Capital Structure Ratios (Market Value)							
	Based on Total Permanent Capital							
22	Long-Term Debt	22.48%	24.21%	23.01%	25.53%	30.92%	27.14%	22
23	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23
24	Common Equity	77.52%	75.79%	76.99%	74.47%	69.08%	72.86%	24
25	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	25
	Based on Total Capital							
26	Total Debt, Including Short Term	30.65%	32.28%	28.65%	30.91%	38.70%	30.45%	26
26	Preferred Stock	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26
28	Common Equity	69.35%	67.72%	71.35%	69.09%	61.30%	69.55%	28
29	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	29

Source: Bloomberg

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
8.0% Debenture, Due 8/1/2026

Internal Rate of Return = 8.89% (Effective Rate)

		Unamortized Balance						Amortization of					
Semi-Annual Payment	Outstanding Principal	Reacquired Debt Expense	Discount	Debt Expense	Net Proceeds	Redemption	Interest Expense	Reacquired Debt Expense	Discount	Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
8/1/1996	$ 75,000,000	$ 5,898,405	$ 894,750	$ 150,000	$ 68,056,845	$ -	$ -	$ -	$ -	$ -	$ -		$ 68,056,845
2/1/1997	75,000,000	5,877,575	891,590	149,470	68,081,364	-	3,000,000	20,830	3,160	530	3,024,520	8.89%	(3,000,000)
8/1/1997	75,000,000	5,855,819	888,290	148,917	68,106,974	-	3,000,000	21,756	3,300	553	3,025,609	8.89%	(3,000,000)
2/1/1998	75,000,000	5,833,097	884,843	148,339	68,133,721	-	3,000,000	22,723	3,447	578	3,026,747	8.89%	(3,000,000)
8/1/1998	75,000,000	5,809,364	881,243	147,736	68,161,657	-	3,000,000	23,732	3,600	604	3,027,936	8.89%	(3,000,000)
2/1/1999	75,000,000	5,784,577	877,483	147,105	68,190,835	-	3,000,000	24,787	3,760	630	3,029,178	8.89%	(3,000,000)
8/1/1999	75,000,000	5,758,688	873,556	146,447	68,221,309	-	3,000,000	25,889	3,927	658	3,030,474	8.89%	(3,000,000)
2/1/2000	75,000,000	5,731,649	869,454	145,759	68,253,137	-	3,000,000	27,039	4,102	688	3,031,829	8.89%	(3,000,000)
8/1/2000	75,000,000	5,703,408	865,170	145,041	68,286,380	-	3,000,000	28,241	4,284	718	3,033,243	8.89%	(3,000,000)
2/1/2001	75,000,000	5,673,912	860,696	144,291	68,321,101	-	3,000,000	29,496	4,474	750	3,034,720	8.89%	(3,000,000)
8/1/2001	75,000,000	5,643,106	856,023	143,508	68,357,364	-	3,000,000	30,807	4,673	783	3,036,263	8.89%	(3,000,000)
2/1/2002	75,000,000	5,610,930	851,142	142,689	68,395,239	-	3,000,000	32,176	4,881	818	3,037,875	8.89%	(3,000,000)
8/1/2002	75,000,000	5,577,324	846,044	141,835	68,434,797	-	3,000,000	33,606	5,098	855	3,039,558	8.89%	(3,000,000)
2/1/2003	75,000,000	5,542,225	840,720	140,942	68,476,114	-	3,000,000	35,099	5,324	893	3,041,316	8.89%	(3,000,000)
8/1/2003	75,000,000	5,505,566	835,159	140,010	68,519,266	-	3,000,000	36,659	5,561	932	3,043,152	8.89%	(3,000,000)
2/1/2004	75,000,000	5,467,277	829,351	139,036	68,564,336	-	3,000,000	38,288	5,808	974	3,045,070	8.89%	(3,000,000)
8/1/2004	75,000,000	5,427,287	823,284	138,019	68,611,409	-	3,000,000	39,990	6,066	1,017	3,047,073	8.89%	(3,000,000)
2/1/2005	75,000,000	5,385,520	816,949	136,957	68,660,574	-	3,000,000	41,767	6,336	1,062	3,049,165	8.89%	(3,000,000)
8/1/2005	75,000,000	5,341,897	810,331	135,848	68,711,924	-	3,000,000	43,623	6,617	1,109	3,051,350	8.89%	(3,000,000)
2/1/2006	75,000,000	5,296,335	803,420	134,689	68,765,556	-	3,000,000	45,562	6,911	1,159	3,053,632	8.89%	(3,000,000)
8/1/2006	75,000,000	5,248,748	796,201	133,479	68,821,571	-	3,000,000	47,587	7,219	1,210	3,056,015	8.89%	(3,000,000)
2/1/2007	75,000,000	5,199,047	788,662	132,215	68,880,076	-	3,000,000	49,702	7,539	1,264	3,058,505	8.89%	(3,000,000)
8/1/2007	75,000,000	5,147,137	780,787	130,895	68,941,181	-	3,000,000	51,910	7,874	1,320	3,061,105	8.89%	(3,000,000)
2/1/2008	75,000,000	5,092,919	772,563	129,516	69,005,002	-	3,000,000	54,217	8,224	1,379	3,063,820	8.89%	(3,000,000)
8/1/2008	75,000,000	5,036,293	763,973	128,076	69,071,658	-	3,000,000	56,627	8,590	1,440	3,066,657	8.89%	(3,000,000)
2/1/2009	75,000,000	4,977,149	755,001	126,572	69,141,277	-	3,000,000	59,143	8,972	1,504	3,069,619	8.89%	(3,000,000)
8/1/2009	75,000,000	4,915,378	745,631	125,001	69,213,990	-	3,000,000	61,772	9,370	1,571	3,072,713	8.89%	(3,000,000)
2/1/2010	75,000,000	4,850,861	735,844	123,360	69,289,935	-	3,000,000	64,517	9,787	1,641	3,075,944	8.89%	(3,000,000)
8/1/2010	75,000,000	4,783,477	725,623	121,647	69,369,254	-	3,000,000	67,384	10,222	1,714	3,079,319	8.89%	(3,000,000)
2/1/2011	75,000,000	4,713,098	714,947	119,857	69,452,098	-	3,000,000	70,379	10,676	1,790	3,082,844	8.89%	(3,000,000)
8/1/2011	75,000,000	4,639,592	703,796	117,988	69,538,625	-	3,000,000	73,506	11,150	1,869	3,086,526	8.89%	(3,000,000)
2/1/2012	75,000,000	4,562,819	692,150	116,035	69,628,996	-	3,000,000	76,773	11,646	1,952	3,090,371	8.89%	(3,000,000)
8/1/2012	75,000,000	4,482,634	679,987	113,996	69,723,384	-	3,000,000	80,185	12,164	2,039	3,094,388	8.89%	(3,000,000)
2/1/2013	75,000,000	4,398,885	667,282	111,866	69,821,966	-	3,000,000	83,748	12,704	2,130	3,098,582	8.89%	(3,000,000)
8/1/2013	75,000,000	4,311,415	654,014	109,642	69,924,930	-	3,000,000	87,470	13,269	2,224	3,102,963	8.89%	(3,000,000)
2/1/2014	75,000,000	4,220,057	640,155	107,319	70,032,469	-	3,000,000	91,358	13,858	2,323	3,107,539	8.89%	(3,000,000)
8/1/2014	75,000,000	4,124,639	625,681	104,892	70,144,787	-	3,000,000	95,418	14,474	2,427	3,112,318	8.89%	(3,000,000)
2/1/2015	75,000,000	4,024,981	610,564	102,358	70,262,097	-	3,000,000	99,658	15,118	2,534	3,117,310	8.89%	(3,000,000)
8/1/2015	75,000,000	3,920,894	594,774	99,711	70,384,621	-	3,000,000	104,087	15,789	2,647	3,122,523	8.89%	(3,000,000)
2/1/2016	75,000,000	3,812,181	578,283	96,946	70,512,589	-	3,000,000	108,713	16,491	2,765	3,127,968	8.89%	(3,000,000)
8/1/2016	75,000,000	3,698,637	561,059	94,059	70,646,245	-	3,000,000	113,544	17,224	2,888	3,133,656	8.89%	(3,000,000)
2/1/2017	75,000,000	3,580,047	543,070	91,043	70,785,840	-	3,000,000	118,590	17,989	3,016	3,139,595	8.89%	(3,000,000)
8/1/2017	75,000,000	3,456,187	524,281	87,893	70,931,639	-	3,000,000	123,860	18,789	3,150	3,145,799	8.89%	(3,000,000)
2/1/2018	75,000,000	3,326,822	504,657	84,603	71,083,918	-	3,000,000	129,365	19,624	3,290	3,152,279	8.89%	(3,000,000)

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
8.0% Debenture, Due 8/1/2026

Effective Rate
Internal Rate of Return = 8.89%

Semi-Annual Payment	Outstanding Principal	Unamortized Balance: Reacquired Debt Expense	Unamortized Balance: Discount	Unamortized Balance: Debt Expense	Net Proceeds	Redemption	Interest Expense	Amortization of: Reacquired Debt Expense	Amortization of: Discount	Amortization of: Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
8/1/2018	75,000,000	3,191,708	484,162	81,167	71,242,964	-	3,000,000	135,114	20,496	3,436	3,159,046	8.89%	(3,000,000)
2/1/2019	75,000,000	3,050,589	462,755	77,578	71,409,078	-	3,000,000	141,119	21,407	3,589	3,166,114	8.89%	(3,000,000)
8/1/2019	75,000,000	2,903,199	440,397	73,830	71,582,574	-	3,000,000	147,390	22,358	3,748	3,173,496	8.89%	(3,000,000)
2/1/2020	75,000,000	2,749,259	417,045	69,915	71,763,781	-	3,000,000	153,940	23,352	3,915	3,181,207	8.89%	(3,000,000)
8/1/2020	75,000,000	2,588,477	392,655	65,827	71,953,041	-	3,000,000	160,782	24,390	4,089	3,189,260	8.89%	(3,000,000)
2/1/2021	75,000,000	2,420,551	367,182	61,556	72,150,712	-	3,000,000	167,927	25,473	4,270	3,197,671	8.89%	(3,000,000)
8/1/2021	75,000,000	2,245,161	340,576	57,096	72,357,167	-	3,000,000	175,390	26,605	4,460	3,206,455	8.89%	(3,000,000)
2/1/2022	75,000,000	2,061,977	312,789	52,437	72,572,797	-	3,000,000	183,184	27,788	4,658	3,215,631	8.89%	(3,000,000)
8/1/2022	75,000,000	1,870,652	283,766	47,572	72,798,011	-	3,000,000	191,325	29,023	4,866	3,225,213	8.89%	(3,000,000)
2/1/2023	75,000,000	1,670,824	253,453	42,490	73,033,233	-	3,000,000	199,828	30,313	5,082	3,235,222	8.89%	(3,000,000)
8/1/2023	75,000,000	1,462,115	221,794	37,182	73,278,909	-	3,000,000	208,708	31,660	5,308	3,245,676	8.89%	(3,000,000)
2/1/2024	75,000,000	1,244,132	188,727	31,639	73,535,502	-	3,000,000	217,984	33,067	5,543	3,256,594	8.89%	(3,000,000)
8/1/2024	75,000,000	1,016,461	154,191	25,849	73,803,499	-	3,000,000	227,671	34,536	5,790	3,267,997	8.89%	(3,000,000)
2/1/2025	75,000,000	778,672	118,120	19,802	74,083,407	-	3,000,000	237,789	36,071	6,047	3,279,907	8.89%	(3,000,000)
8/1/2025	75,000,000	530,315	80,445	13,486	74,375,753	-	3,000,000	248,357	37,674	6,316	3,292,346	8.89%	(3,000,000)
2/1/2026	75,000,000	270,922	41,097	6,890	74,681,092	-	3,000,000	259,394	39,348	6,597	3,305,339	8.89%	(3,000,000)
8/1/2026	75,000,000	-	-	-	75,000,000	75,000,000	3,000,000	270,922	41,097	6,890	3,318,908	8.89%	(78,000,000)
						$ 75,000,000	$ 180,000,000	$ 5,898,405	$ 894,750	$ 150,000	$ 186,943,155		

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
8.375 % Notes Due 2011

Effective Rate
Internal Rate of Return = 8.61%

Semi-Annual Payment	Outstanding Principal	Unamortized Balance: Reacquired Debt Expense	Unamortized Balance: Discount	Unamortized Balance: Debt Expense	Net Proceeds	Redemption	Interest Expense	Amortization of: Reacquired Debt Expense	Amortization of: Discount	Amortization of: Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
2/13/2001	$ 200,000,000	$ 0	$ 2,818,000	$ 288,784	$ 196,893,216	$ 0	$ 0		$ 0	$ 0	$ 0		$ 196,893,216
8/15/2001	200,000,000	0	2,726,322	279,389	196,994,289	0	8,375,000	0	91,678	9,395	8,476,073	8.61%	(8,375,000)
2/15/2002	200,000,000	0	2,630,697	269,589	197,099,713	0	8,375,000	0	95,625	9,799	8,480,424	8.61%	(8,375,000)
8/15/2002	200,000,000	0	2,530,956	259,368	197,209,676	0	8,375,000	0	99,741	10,221	8,484,962	8.61%	(8,375,000)
2/15/2003	200,000,000	0	2,426,921	248,707	197,324,372	0	8,375,000	0	104,035	10,661	8,489,696	8.61%	(8,375,000)
8/15/2003	200,000,000	0	2,318,408	237,586	197,444,006	0	8,375,000	0	108,514	11,120	8,494,634	8.61%	(8,375,000)
2/15/2004	200,000,000	0	2,205,223	225,987	197,568,790	0	8,375,000	0	113,185	11,599	8,499,784	8.61%	(8,375,000)
8/15/2004	200,000,000	0	2,087,166	213,889	197,698,945	0	8,375,000	0	118,057	12,098	8,505,156	8.61%	(8,375,000)
2/15/2005	200,000,000	0	1,964,026	201,270	197,834,704	0	8,375,000	0	123,140	12,619	8,510,759	8.61%	(8,375,000)
8/15/2005	200,000,000	0	1,835,585	188,108	197,976,307	0	8,375,000	0	128,441	13,162	8,516,603	8.61%	(8,375,000)
2/15/2006	200,000,000	0	1,701,615	174,379	198,124,006	0	8,375,000	0	133,970	13,729	8,522,699	8.61%	(8,375,000)
8/15/2006	200,000,000	0	1,561,878	160,058	198,278,064	0	8,375,000	0	139,737	14,320	8,529,057	8.61%	(8,375,000)
2/15/2007	200,000,000	0	1,416,125	145,122	198,438,753	0	8,375,000	0	145,753	14,936	8,535,689	8.61%	(8,375,000)
8/15/2007	200,000,000	0	1,264,098	129,543	198,606,360	0	8,375,000	0	152,027	15,579	8,542,607	8.61%	(8,375,000)
2/15/2008	200,000,000	0	1,105,526	113,292	198,781,182	0	8,375,000	0	158,572	16,250	8,549,822	8.61%	(8,375,000)
8/15/2008	200,000,000	0	940,127	96,343	198,963,530	0	8,375,000	0	165,398	16,950	8,557,348	8.61%	(8,375,000)
2/15/2009	200,000,000	0	767,609	78,663	199,153,728	0	8,375,000	0	172,519	17,679	8,565,198	8.61%	(8,375,000)
8/15/2009	200,000,000	0	587,663	60,223	199,352,114	0	8,375,000	0	179,945	18,440	8,573,386	8.61%	(8,375,000)
2/15/2010	200,000,000	0	399,971	40,988	199,559,040	0	8,375,000	0	187,692	19,234	8,581,926	8.61%	(8,375,000)
8/15/2010	200,000,000	0	204,200	20,926	199,774,874	0	8,375,000	0	195,772	20,062	8,590,834	8.61%	(8,375,000)
2/15/2011	200,000,000	0	0	0	200,000,000	200,000,000	8,375,000	0	204,200	20,926	8,600,126	8.61%	(208,375,000)
						$ 200,000,000	$ 167,500,000	$ 0	$ 2,818,000	$ 288,784	$ 170,606,784		

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
7.625% New Debenture, Due May 15, 2012

Internal Rate of Return = Effective Rate 7.79%

		Unamortized Balance						Amortization of					
Semi-Annual Payment	Outstanding Principal	Reacquired Debt Expense	Discount	Debt Expense	Net Proceeds	Redemption	Interest Expense	Reacquired Debt Expense	Discount	Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
5/15/2002	$ 200,000,000	$ 0	$ 2,052,000	$ 270,042	$ 197,677,958	$ 0	$ 0		$ 0	$ 0	$ 0		$ 197,677,958
11/15/2002	200,000,000	0	1,982,352	260,876	197,756,772	0	7,625,000	0	69,648	9,166	7,703,814	7.79%	(7,625,000)
6/15/2003	200,000,000	0	1,909,989	251,354	197,838,657	0	7,625,000	0	72,363	9,523	7,706,885	7.79%	(7,625,000)
11/15/2003	200,000,000	0	1,834,806	241,460	197,923,734	0	7,625,000	0	75,183	9,894	7,710,077	7.79%	(7,625,000)
5/15/2004	200,000,000	0	1,756,694	231,180	198,012,126	0	7,625,000	0	78,113	10,280	7,713,392	7.79%	(7,625,000)
11/15/2004	200,000,000	0	1,675,537	220,500	198,103,963	0	7,625,000	0	81,157	10,680	7,716,837	7.79%	(7,625,000)
5/15/2005	200,000,000	0	1,591,217	209,403	198,199,379	0	7,625,000	0	84,320	11,096	7,720,416	7.79%	(7,625,000)
11/15/2005	200,000,000	0	1,503,612	197,874	198,298,514	0	7,625,000	0	87,606	11,529	7,724,135	7.79%	(7,625,000)
5/15/2006	200,000,000	0	1,412,592	185,896	198,401,512	0	7,625,000	0	91,020	11,978	7,727,998	7.79%	(7,625,000)
11/15/2006	200,000,000	0	1,318,025	173,451	198,508,524	0	7,625,000	0	94,567	12,445	7,732,012	7.79%	(7,625,000)
5/15/2007	200,000,000	0	1,219,772	160,521	198,619,706	0	7,625,000	0	98,252	12,930	7,736,182	7.79%	(7,625,000)
11/15/2007	200,000,000	0	1,117,691	147,087	198,735,222	0	7,625,000	0	102,082	13,434	7,740,515	7.79%	(7,625,000)
5/15/2008	200,000,000	0	1,011,631	133,130	198,855,239	0	7,625,000	0	106,060	13,957	7,745,017	7.79%	(7,625,000)
11/15/2008	200,000,000	0	901,438	118,629	198,979,933	0	7,625,000	0	110,193	14,501	7,749,694	7.79%	(7,625,000)
5/15/2009	200,000,000	0	786,950	103,562	199,109,487	0	7,625,000	0	114,487	15,066	7,754,554	7.79%	(7,625,000)
11/15/2009	200,000,000	0	668,001	87,909	199,244,090	0	7,625,000	0	118,949	15,654	7,759,603	7.79%	(7,625,000)
5/15/2010	200,000,000	0	544,416	71,645	199,383,939	0	7,625,000	0	123,585	16,264	7,764,849	7.79%	(7,625,000)
11/15/2010	200,000,000	0	416,015	54,747	199,529,238	0	7,625,000	0	128,401	16,898	7,770,299	7.79%	(7,625,000)
5/15/2011	200,000,000	0	282,610	37,191	199,680,199	0	7,625,000	0	133,405	17,556	7,775,961	7.79%	(7,625,000)
11/15/2011	200,000,000	0	144,006	18,951	199,837,043	0	7,625,000	0	138,604	18,240	7,781,844	7.79%	(7,625,000)
5/15/2012	200,000,000	0	0	(0)	200,000,000	200,000,000	7,625,000	0	144,006	18,951	7,787,957	7.79%	(207,625,000)
						$ 200,000,000	$ 152,500,000	$ 0	$ 2,052,000	$ 270,042	$ 154,822,042		

SOUTHWEST GAS CORPORATION

Effective Cost Calculation of
7.59% Medium Term Note Series A, Due 1/17/2017

Internal Rate of Return = Effective Rate 7.68%

Semi-Annual Payment	Outstanding Principal	Unamortized Balance: Reacquired Debt Expense	Unamortized Balance: Discount	Unamortized Balance: Debt Expense	Net Proceeds	Redemption	Interest Expense	Amortization of: Reacquired Debt Expense	Amortization of: Discount	Amortization of: Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1/17/1997	$ 25,000,000	$ -	$ 187,500	$ 33,400	$ 24,779,100	$ -	$ -	$ -	$ -	$ -	$ 0		$ 24,779,100
4/1/1997	25,000,000	-	186,657	33,250	24,780,093	-	390,042	-	843	150.09	391,034	7.68%	(390,042)
10/1/1997	25,000,000	-	184,576	32,879	24,782,545	-	948,750	-	2,082	371	951,203	7.68%	(948,750)
4/1/1998	25,000,000	-	182,414	32,494	24,785,092	-	948,750	-	2,162	385	951,297	7.68%	(948,750)
10/1/1998	25,000,000	-	180,169	32,094	24,787,737	-	948,750	-	2,245	400	951,395	7.68%	(948,750)
4/1/1999	25,000,000	-	177,838	31,679	24,790,483	-	948,750	-	2,331	415	951,496	7.68%	(948,750)
10/1/1999	25,000,000	-	175,418	31,248	24,793,334	-	948,750	-	2,420	431	951,601	7.68%	(948,750)
4/1/2000	25,000,000	-	172,905	30,800	24,796,295	-	948,750	-	2,513	448	951,711	7.68%	(948,750)
10/1/2000	25,000,000	-	170,295	30,335	24,799,370	-	948,750	-	2,610	465	951,825	7.68%	(948,750)
4/1/2001	25,000,000	-	167,585	29,852	24,802,562	-	948,750	-	2,710	483	951,943	7.68%	(948,750)
10/1/2001	25,000,000	-	164,771	29,351	24,805,878	-	948,750	-	2,814	501	952,065	7.68%	(948,750)
4/1/2002	25,000,000	-	161,849	28,831	24,809,320	-	948,750	-	2,922	521	952,192	7.68%	(948,750)
10/1/2002	25,000,000	-	158,815	28,290	24,812,895	-	948,750	-	3,034	540	952,325	7.68%	(948,750)
4/1/2003	25,000,000	-	155,665	27,729	24,816,606	-	948,750	-	3,151	561	952,462	7.68%	(948,750)
10/1/2003	25,000,000	-	152,393	27,146	24,820,461	-	948,750	-	3,272	583	952,604	7.68%	(948,750)
4/1/2004	25,000,000	-	148,996	26,541	24,824,463	-	948,750	-	3,397	605	952,752	7.68%	(948,750)
10/1/2004	25,000,000	-	145,468	25,913	24,828,619	-	948,750	-	3,527	628	952,906	7.68%	(948,750)
4/1/2005	25,000,000	-	141,806	25,260	24,832,934	-	948,750	-	3,663	652	953,065	7.68%	(948,750)
10/1/2005	25,000,000	-	138,002	24,583	24,837,415	-	948,750	-	3,803	678	953,231	7.68%	(948,750)
4/1/2006	25,000,000	-	134,053	23,879	24,842,068	-	948,750	-	3,949	704	953,403	7.68%	(948,750)
10/1/2006	25,000,000	-	129,951	23,149	24,846,900	-	948,750	-	4,101	731	953,582	7.68%	(948,750)
4/1/2007	25,000,000	-	125,693	22,390	24,851,917	-	948,750	-	4,259	759	953,767	7.68%	(948,750)
10/1/2007	25,000,000	-	121,271	21,602	24,857,127	-	948,750	-	4,422	788	953,960	7.68%	(948,750)
4/1/2008	25,000,000	-	116,679	20,784	24,862,536	-	948,750	-	4,592	818	954,160	7.68%	(948,750)
10/1/2008	25,000,000	-	111,911	19,935	24,868,154	-	948,750	-	4,768	849	954,367	7.68%	(948,750)
4/1/2009	25,000,000	-	106,960	19,053	24,873,987	-	948,750	-	4,951	882	954,583	7.68%	(948,750)
10/1/2009	25,000,000	-	101,819	18,137	24,880,043	-	948,750	-	5,141	916	954,807	7.68%	(948,750)
4/1/2010	25,000,000	-	96,481	17,186	24,886,333	-	948,750	-	5,338	951	955,039	7.68%	(948,750)
10/1/2010	25,000,000	-	90,937	16,199	24,892,864	-	948,750	-	5,543	987	955,281	7.68%	(948,750)
4/1/2011	25,000,000	-	85,181	15,174	24,899,645	-	948,750	-	5,756	1,025	955,531	7.68%	(948,750)
10/1/2011	25,000,000	-	79,204	14,109	24,906,687	-	948,750	-	5,977	1,065	955,792	7.68%	(948,750)
4/1/2012	25,000,000	-	72,998	13,003	24,913,999	-	948,750	-	6,206	1,106	956,062	7.68%	(948,750)
10/1/2012	25,000,000	-	66,553	11,855	24,921,592	-	948,750	-	6,445	1,148	956,343	7.68%	(948,750)
4/1/2013	25,000,000	-	59,861	10,663	24,929,476	-	948,750	-	6,692	1,192	956,634	7.68%	(948,750)
10/1/2013	25,000,000	-	52,912	9,425	24,937,663	-	948,750	-	6,949	1,238	956,937	7.68%	(948,750)
4/1/2014	25,000,000	-	45,696	8,140	24,946,164	-	948,750	-	7,216	1,285	957,251	7.68%	(948,750)
10/1/2014	25,000,000	-	38,204	6,805	24,954,991	-	948,750	-	7,493	1,335	957,577	7.68%	(948,750)
4/1/2015	25,000,000	-	30,423	5,419	24,964,157	-	948,750	-	7,780	1,386	957,916	7.68%	(948,750)
10/1/2015	25,000,000	-	22,344	3,980	24,973,676	-	948,750	-	8,079	1,439	958,268	7.68%	(948,750)
4/1/2016	25,000,000	-	13,955	2,486	24,983,559	-	948,750	-	8,389	1,494	958,633	7.68%	(948,750)
10/1/2016	25,000,000	-	5,244	934	24,993,822	-	948,750	-	8,711	1,552	959,013	7.68%	(948,750)
1/17/2017	25,000,000	-	-	-	25,000,000	25,000,000	558,708	-	5,244	934	564,886	7.68%	(25,558,708)
						$ 25,000,000	$ 37,950,000	$ -	$ 187,500	$ 33,400	$ 38,170,900		

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
7.78% Medium Term Note Series A, Due 2/3/2022

Internal Rate of Return = Effective Rate 7.86%

Semi-Annual Payment (a)	Outstanding Principal (b)	Unamortized Balance: Reacquired Debt Expense (c)	Unamortized Balance: Discount (d)	Unamortized Balance: Debt Expense (e)	Net Proceeds (f)	Redemption (g)	Interest Expense (h)	Amortization of: Reacquired Debt Expense (i)	Amortization of: Discount (j)	Amortization of: Debt Expense (k)	Total Expense (l)	Annual Cost (m)	Cash Flows (n)
2/3/1997	$ 25,000,000	$ -	$ 187,500	$ 33,400	$ 24,779,100	$ -	$ -	$ -	$ -	$ -	$ -		$ 24,779,100
4/1/1997	25,000,000	-	187,096	33,328	24,779,576	-	313,361	-	404	72	313,837	7.86%	(313,361)
10/1/1997	25,000,000	-	185,825	33,102	24,781,073	-	972,500	-	1,271	226	973,997	7.86%	(972,500)
4/1/1998	25,000,000	-	184,504	32,866	24,782,629	-	972,500	-	1,321	235	974,056	7.86%	(972,500)
10/1/1998	25,000,000	-	183,132	32,622	24,784,246	-	972,500	-	1,373	244	974,117	7.86%	(972,500)
4/1/1999	25,000,000	-	181,705	32,368	24,785,927	-	972,500	-	1,426	254	974,181	7.86%	(972,500)
10/1/1999	25,000,000	-	180,223	32,104	24,787,673	-	972,500	-	1,483	264	974,247	7.86%	(972,500)
4/1/2000	25,000,000	-	178,682	31,829	24,789,489	-	972,500	-	1,541	274	974,315	7.86%	(972,500)
10/1/2000	25,000,000	-	177,081	31,544	24,791,375	-	972,500	-	1,601	285	974,387	7.86%	(972,500)
4/1/2001	25,000,000	-	175,416	31,248	24,793,336	-	972,500	-	1,664	296	974,461	7.86%	(972,500)
10/1/2001	25,000,000	-	173,687	30,939	24,795,374	-	972,500	-	1,730	308	974,538	7.86%	(972,500)
4/1/2002	25,000,000	-	171,889	30,619	24,797,492	-	972,500	-	1,798	320	974,618	7.86%	(972,500)
10/1/2002	25,000,000	-	170,021	30,286	24,799,693	-	972,500	-	1,868	333	974,701	7.86%	(972,500)
4/1/2003	25,000,000	-	168,079	29,940	24,801,981	-	972,500	-	1,942	346	974,788	7.86%	(972,500)
10/1/2003	25,000,000	-	166,061	29,581	24,804,359	-	972,500	-	2,018	360	974,878	7.86%	(972,500)
4/1/2004	25,000,000	-	163,963	29,207	24,806,830	-	972,500	-	2,097	374	974,971	7.86%	(972,500)
10/1/2004	25,000,000	-	161,783	28,819	24,809,398	-	972,500	-	2,180	388	975,068	7.86%	(972,500)
4/1/2005	25,000,000	-	159,518	28,415	24,812,067	-	972,500	-	2,266	404	975,169	7.86%	(972,500)
10/1/2005	25,000,000	-	157,163	27,996	24,814,841	-	972,500	-	2,355	419	975,274	7.86%	(972,500)
4/1/2006	25,000,000	-	154,716	27,560	24,817,724	-	972,500	-	2,447	436	975,383	7.86%	(972,500)
10/1/2006	25,000,000	-	152,172	27,107	24,820,721	-	972,500	-	2,543	453	975,496	7.86%	(972,500)
4/1/2007	25,000,000	-	149,529	26,636	24,823,835	-	972,500	-	2,643	471	975,614	7.86%	(972,500)
10/1/2007	25,000,000	-	146,782	26,147	24,827,072	-	972,500	-	2,747	489	975,737	7.86%	(972,500)
4/1/2008	25,000,000	-	143,926	25,638	24,830,436	-	972,500	-	2,855	509	975,864	7.86%	(972,500)
10/1/2008	25,000,000	-	140,959	25,109	24,833,932	-	972,500	-	2,968	529	975,996	7.86%	(972,500)
4/1/2009	25,000,000	-	137,875	24,560	24,837,565	-	972,500	-	3,084	549	976,134	7.86%	(972,500)
10/1/2009	25,000,000	-	134,669	23,989	24,841,342	-	972,500	-	3,205	571	976,276	7.86%	(972,500)
4/1/2010	25,000,000	-	131,338	23,396	24,845,266	-	972,500	-	3,331	593	976,425	7.86%	(972,500)
10/1/2010	25,000,000	-	127,876	22,779	24,849,345	-	972,500	-	3,462	617	976,579	7.86%	(972,500)
4/1/2011	25,000,000	-	124,277	22,138	24,853,585	-	972,500	-	3,598	641	976,739	7.86%	(972,500)
10/1/2011	25,000,000	-	120,537	21,472	24,857,991	-	972,500	-	3,740	666	976,906	7.86%	(972,500)
4/1/2012	25,000,000	-	116,651	20,779	24,862,570	-	972,500	-	3,887	692	977,079	7.86%	(972,500)
10/1/2012	25,000,000	-	112,611	20,060	24,867,329	-	972,500	-	4,040	720	977,259	7.86%	(972,500)
4/1/2013	25,000,000	-	108,413	19,312	24,872,275	-	972,500	-	4,198	748	977,446	7.86%	(972,500)
10/1/2013	25,000,000	-	104,049	18,535	24,877,416	-	972,500	-	4,363	777	977,641	7.86%	(972,500)
4/1/2014	25,000,000	-	99,514	17,727	24,882,759	-	972,500	-	4,535	808	977,843	7.86%	(972,500)
10/1/2014	25,000,000	-	94,801	16,887	24,888,312	-	972,500	-	4,713	840	978,053	7.86%	(972,500)
4/1/2015	25,000,000	-	89,903	16,015	24,894,083	-	972,500	-	4,898	873	978,271	7.86%	(972,500)
10/1/2015	25,000,000	-	84,812	15,108	24,900,080	-	972,500	-	5,091	907	978,498	7.86%	(972,500)
4/1/2016	25,000,000	-	79,521	14,165	24,906,314	-	972,500	-	5,291	943	978,734	7.86%	(972,500)
10/1/2016	25,000,000	-	74,022	13,186	24,912,793	-	972,500	-	5,499	980	978,979	7.86%	(972,500)
4/1/2017	25,000,000	-	68,306	12,168	24,919,526	-	972,500	-	5,715	1,018	979,233	7.86%	(972,500)
10/1/2017	25,000,000	-	62,367	11,110	24,926,524	-	972,500	-	5,940	1,058	979,498	7.86%	(972,500)
4/1/2018	25,000,000	-	56,193	10,010	24,933,797	-	972,500	-	6,173	1,100	979,773	7.86%	(972,500)

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
7.78% Medium Term Note Series A, Due 2/3/2022

Internal Rate of Return = Effective Rate 7.86%

		Unamortized Balance						Amortization of					
Semi-Annual Payment	Outstanding Principal	Reacquired Debt Expense	Discount	Debt Expense	Net Proceeds	Redemption	Interest Expense	Reacquired Debt Expense	Discount	Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
10/1/2018	25,000,000	-	49,777	8,867	24,941,356	-	972,500	-	6,416	1,143	980,059	7.86%	(972,500)
4/1/2019	25,000,000	-	43,109	7,679	24,949,212	-	972,500	-	6,668	1,188	980,356	7.86%	(972,500)
10/1/2019	25,000,000	-	36,179	6,445	24,957,377	-	972,500	-	6,930	1,235	980,665	7.86%	(972,500)
4/1/2020	25,000,000	-	28,976	5,162	24,965,862	-	972,500	-	7,203	1,283	980,986	7.86%	(972,500)
10/1/2020	25,000,000	-	21,490	3,828	24,974,681	-	972,500	-	7,486	1,333	981,319	7.86%	(972,500)
4/1/2021	25,000,000	-	13,710	2,442	24,983,847	-	972,500	-	7,780	1,386	981,666	7.86%	(972,500)
10/1/2021	25,000,000	-	5,624	1,002	24,993,374	-	972,500	-	8,086	1,440	982,026	7.86%	(972,500)
2/3/2022	25,000,000	-	-	-	25,000,000	25,000,000	659,139	-	5,624	1,002	665,765	7.86%	(25,659,139)
						$ 25,000,000	$ 48,625,000	$ -	$ 187,500	$ 33,400	$ 48,845,900		

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
7.92% Medium Term Note, Due June 4, 2027

Internal Rate of Return = Effective Rate 8.00%

Semi-Annual Payment	Outstanding Principal	Unamortized Balance: Reacquired Debt Expense	Unamortized Balance: Discount	Unamortized Balance: Debt Expense	Net Proceeds	Redemption	Interest Expense	Amortization of: Reacquired Debt Expense	Amortization of: Discount	Amortization of: Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
6/4/1997	$ 25,000,000	$ -	$ 187,500	$ 45,761	$ 24,766,739	$ -	$ -	$ -	$ -	$ -	$ -		$ 24,766,739
10/1/1997	25,000,000	-	186,988	45,636	24,767,375	-	643,500	-	512	125	644,137	8.00%	(643,500)
4/1/1998	25,000,000	-	186,180	45,439	24,768,381	-	990,000	-	808	197	991,005	8.00%	(990,000)
10/1/1998	25,000,000	-	185,340	45,234	24,769,426	-	990,000	-	840	205	991,045	8.00%	(990,000)
4/1/1999	25,000,000	-	184,466	45,021	24,770,513	-	990,000	-	874	213	991,087	8.00%	(990,000)
10/1/1999	25,000,000	-	183,557	44,799	24,771,644	-	990,000	-	909	222	991,131	8.00%	(990,000)
4/1/2000	25,000,000	-	182,612	44,568	24,772,820	-	990,000	-	945	231	991,176	8.00%	(990,000)
10/1/2000	25,000,000	-	181,629	44,329	24,774,043	-	990,000	-	983	240	991,223	8.00%	(990,000)
4/1/2001	25,000,000	-	180,607	44,079	24,775,315	-	990,000	-	1,022	250	991,272	8.00%	(990,000)
10/1/2001	25,000,000	-	179,543	43,819	24,776,637	-	990,000	-	1,063	260	991,323	8.00%	(990,000)
4/1/2002	25,000,000	-	178,437	43,550	24,778,013	-	990,000	-	1,106	270	991,376	8.00%	(990,000)
10/1/2002	25,000,000	-	177,287	43,269	24,779,444	-	990,000	-	1,150	281	991,431	8.00%	(990,000)
4/1/2003	25,000,000	-	176,091	42,977	24,780,932	-	990,000	-	1,196	292	991,488	8.00%	(990,000)
10/1/2003	25,000,000	-	174,847	42,673	24,782,479	-	990,000	-	1,244	304	991,548	8.00%	(990,000)
4/1/2004	25,000,000	-	173,554	42,358	24,784,089	-	990,000	-	1,294	316	991,609	8.00%	(990,000)
10/1/2004	25,000,000	-	172,208	42,029	24,785,763	-	990,000	-	1,346	328	991,674	8.00%	(990,000)
4/1/2005	25,000,000	-	170,809	41,688	24,787,504	-	990,000	-	1,399	342	991,741	8.00%	(990,000)
10/1/2005	25,000,000	-	169,353	41,333	24,789,314	-	990,000	-	1,455	355	991,811	8.00%	(990,000)
4/1/2006	25,000,000	-	167,840	40,963	24,791,197	-	990,000	-	1,514	369	991,883	8.00%	(990,000)
10/1/2006	25,000,000	-	166,266	40,579	24,793,155	-	990,000	-	1,574	384	991,958	8.00%	(990,000)
4/1/2007	25,000,000	-	164,629	40,179	24,795,192	-	990,000	-	1,637	400	992,037	8.00%	(990,000)
10/1/2007	25,000,000	-	162,926	39,764	24,797,310	-	990,000	-	1,703	416	992,118	8.00%	(990,000)
4/1/2008	25,000,000	-	161,155	39,332	24,799,513	-	990,000	-	1,771	432	992,203	8.00%	(990,000)
10/1/2008	25,000,000	-	159,314	38,882	24,801,804	-	990,000	-	1,842	449	992,291	8.00%	(990,000)
4/1/2009	25,000,000	-	157,398	38,415	24,804,187	-	990,000	-	1,915	467	992,383	8.00%	(990,000)
10/1/2009	25,000,000	-	155,407	37,929	24,806,665	-	990,000	-	1,992	486	992,478	8.00%	(990,000)
4/1/2010	25,000,000	-	153,335	37,423	24,809,242	-	990,000	-	2,072	506	992,577	8.00%	(990,000)
10/1/2010	25,000,000	-	151,180	36,897	24,811,922	-	990,000	-	2,154	526	992,680	8.00%	(990,000)
4/1/2011	25,000,000	-	148,940	36,350	24,814,710	-	990,000	-	2,241	547	992,788	8.00%	(990,000)
10/1/2011	25,000,000	-	146,609	35,782	24,817,609	-	990,000	-	2,330	569	992,899	8.00%	(990,000)
4/1/2012	25,000,000	-	144,186	35,190	24,820,624	-	990,000	-	2,424	592	993,015	8.00%	(990,000)
10/1/2012	25,000,000	-	141,665	34,575	24,823,760	-	990,000	-	2,521	615	993,136	8.00%	(990,000)
4/1/2013	25,000,000	-	139,044	33,935	24,827,021	-	990,000	-	2,621	640	993,261	8.00%	(990,000)
10/1/2013	25,000,000	-	136,317	33,270	24,830,413	-	990,000	-	2,726	665	993,392	8.00%	(990,000)
4/1/2014	25,000,000	-	133,482	32,578	24,833,940	-	990,000	-	2,835	692	993,527	8.00%	(990,000)
10/1/2014	25,000,000	-	130,533	31,858	24,837,609	-	990,000	-	2,949	720	993,669	8.00%	(990,000)
4/1/2015	25,000,000	-	127,466	31,110	24,841,424	-	990,000	-	3,067	748	993,815	8.00%	(990,000)
10/1/2015	25,000,000	-	124,277	30,331	24,845,392	-	990,000	-	3,190	778	993,968	8.00%	(990,000)
4/1/2016	25,000,000	-	120,960	29,521	24,849,519	-	990,000	-	3,317	810	994,127	8.00%	(990,000)
10/1/2016	25,000,000	-	117,510	28,679	24,853,811	-	990,000	-	3,450	842	994,292	8.00%	(990,000)
4/1/2017	25,000,000	-	113,922	27,804	24,858,275	-	990,000	-	3,588	876	994,464	8.00%	(990,000)
10/1/2017	25,000,000	-	110,190	26,893	24,862,917	-	990,000	-	3,732	911	994,642	8.00%	(990,000)
4/1/2018	25,000,000	-	106,309	25,946	24,867,745	-	990,000	-	3,881	947	994,828	8.00%	(990,000)
10/1/2018	25,000,000	-	102,273	24,961	24,872,766	-	990,000	-	4,036	985	995,021	8.00%	(990,000)

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
7.92% Medium Term Note, Due June 4, 2027

Internal Rate of Return = Effective Rate 8.00%

		Unamortized Balance						Amortization of					
Semi-Annual Payment	Outstanding Principal	Reacquired Debt Expense	Discount	Debt Expense	Net Proceeds	Redemption	Interest Expense	Reacquired Debt Expense	Discount	Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
4/1/2019	25,000,000	-	98,076	23,936	24,877,988	-	990,000	-	4,198	1,024	995,222	8.00%	(990,000)
10/1/2019	25,000,000	-	93,710	22,871	24,883,419	-	990,000	-	4,366	1,065	995,431	8.00%	(990,000)
4/1/2020	25,000,000	-	89,170	21,763	24,889,067	-	990,000	-	4,540	1,108	995,648	8.00%	(990,000)
10/1/2020	25,000,000	-	84,448	20,610	24,894,942	-	990,000	-	4,722	1,152	995,874	8.00%	(990,000)
4/1/2021	25,000,000	-	79,537	19,412	24,901,051	-	990,000	-	4,911	1,199	996,109	8.00%	(990,000)
10/1/2021	25,000,000	-	74,430	18,165	24,907,405	-	990,000	-	5,107	1,246	996,354	8.00%	(990,000)
4/1/2022	25,000,000	-	69,118	16,869	24,914,013	-	990,000	-	5,312	1,296	996,608	8.00%	(990,000)
10/1/2022	25,000,000	-	63,594	15,521	24,920,885	-	990,000	-	5,524	1,348	996,872	8.00%	(990,000)
4/1/2023	25,000,000	-	57,849	14,119	24,928,033	-	990,000	-	5,745	1,402	997,147	8.00%	(990,000)
10/1/2023	25,000,000	-	51,873	12,660	24,935,466	-	990,000	-	5,975	1,458	997,433	8.00%	(990,000)
4/1/2024	25,000,000	-	45,659	11,144	24,943,197	-	990,000	-	6,214	1,517	997,731	8.00%	(990,000)
10/1/2024	25,000,000	-	39,196	9,566	24,951,237	-	990,000	-	6,463	1,577	998,040	8.00%	(990,000)
4/1/2025	25,000,000	-	32,475	7,926	24,959,599	-	990,000	-	6,721	1,640	998,362	8.00%	(990,000)
10/1/2025	25,000,000	-	25,485	6,220	24,968,296	-	990,000	-	6,990	1,706	998,696	8.00%	(990,000)
4/1/2026	25,000,000	-	18,214	4,445	24,977,340	-	990,000	-	7,270	1,774	999,044	8.00%	(990,000)
10/1/2026	25,000,000	-	10,653	2,600	24,986,747	-	990,000	-	7,561	1,845	999,406	8.00%	(990,000)
4/1/2027	25,000,000	-	2,790	681	24,996,529	-	990,000	-	7,864	1,919	999,783	8.00%	(990,000)
6/4/2027	25,000,000	-	-	-	25,000,000	25,000,000	346,500	-	2,790	681	349,971	8.00%	(25,346,500)
						$ 25,000,000	$ 59,400,000	$ -	$ 187,500	$ 45,761	$ 59,633,261		

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
6.76% Medium Term Note Series A, Due 9/24/27
Put Date September 24, 2007

		Unamortized Balance						Amortization of					
Semi-Annual Payment	Outstanding Principal	Reacquired Debt Expense	Discount	Debt Expense	Net Proceeds	Redemption	Interest Expense	Reacquired Debt Expense	Discount	Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
9/23/1997	$ 7,500,000	$ -	$ 46,875	$ 17,228	$ 7,435,897	$ -	$ -	$ -	$ -	$ -	$ -		$ 7,435,897
4/1/1998	7,500,000	-	45,133	16,588	7,438,279	-	264,767	-	1,742	640	267,149	6.88%	(264,767)
10/1/1998	7,500,000	-	43,405	15,953	7,440,642	-	253,500	-	1,728	635	255,863	6.88%	(253,500)
4/1/1999	7,500,000	-	41,618	15,296	7,443,086	-	253,500	-	1,787	657	255,944	6.88%	(253,500)
10/1/1999	7,500,000	-	39,769	14,617	7,445,614	-	253,500	-	1,849	679	256,028	6.88%	(253,500)
4/1/2000	7,500,000	-	37,857	13,914	7,448,229	-	253,500	-	1,912	703	256,115	6.88%	(253,500)
10/1/2000	7,500,000	-	35,879	13,187	7,450,934	-	253,500	-	1,978	727	256,205	6.88%	(253,500)
4/1/2001	7,500,000	-	33,833	12,435	7,453,732	-	253,500	-	2,046	752	256,298	6.88%	(253,500)
10/1/2001	7,500,000	-	31,717	11,657	7,456,626	-	253,500	-	2,116	778	256,394	6.88%	(253,500)
4/1/2002	7,500,000	-	29,527	10,853	7,459,620	-	253,500	-	2,189	805	256,494	6.88%	(253,500)
10/1/2002	7,500,000	-	27,263	10,020	7,462,717	-	253,500	-	2,265	832	256,597	6.88%	(253,500)
4/1/2003	7,500,000	-	24,920	9,159	7,465,920	-	253,500	-	2,342	861	256,703	6.88%	(253,500)
10/1/2003	7,500,000	-	22,497	8,269	7,469,234	-	253,500	-	2,423	891	256,814	6.88%	(253,500)
4/1/2004	7,500,000	-	19,991	7,348	7,472,661	-	253,500	-	2,506	921	256,928	6.88%	(253,500)
10/1/2004	7,500,000	-	17,398	6,395	7,476,207	-	253,500	-	2,593	953	257,045	6.88%	(253,500)
4/1/2005	7,500,000	-	14,717	5,409	7,479,874	-	253,500	-	2,682	986	257,167	6.88%	(253,500)
10/1/2005	7,500,000	-	11,943	4,389	7,483,668	-	253,500	-	2,774	1,020	257,294	6.88%	(253,500)
4/1/2006	7,500,000	-	9,073	3,335	7,487,592	-	253,500	-	2,869	1,055	257,424	6.88%	(253,500)
10/1/2006	7,500,000	-	6,105	2,244	7,491,651	-	253,500	-	2,968	1,091	257,559	6.88%	(253,500)
4/1/2007	7,500,000	-	3,035	1,115	7,495,850	-	253,500	-	3,070	1,128	257,699	6.88%	(253,500)
10/1/2007	7,500,000	-	0.00	0.00	7,500,000	-	253,500	-	3,035	1,115	257,650	6.87%	(253,500)
4/1/2008	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2008	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2009	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2009	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2010	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2010	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2011	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2011	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2012	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2012	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2013	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2013	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2014	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2014	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2015	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2015	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2016	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2016	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2017	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2017	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2018	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2018	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)

SOUTHWEST GAS CORPORATION
Effective Cost Calculation of
6.76% Medium Term Note Series A, Due 9/24/27
Put Date September 24, 2007

		Unamortized Balance						Amortization of					
Semi-Annual Payment	Outstanding Principal	Reacquired Debt Expense	Discount	Debt Expense	Net Proceeds	Redemption	Interest Expense	Reacquired Debt Expense	Discount	Debt Expense	Total Expense	Annual Cost	Cash Flows
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
4/1/2019	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2019	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2020	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2020	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2021	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2021	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2022	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2022	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2023	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2023	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2024	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2024	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2025	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2025	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2026	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
10/1/2026	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
4/1/2027	7,500,000	-	-	-	7,500,000	-	253,500	-	-	-	253,500	6.76%	(253,500)
9/24/2027	7,500,000	-	-	-	7,500,000	7,500,000	243,642	-	-	-	243,642	6.76%	(7,743,642)
						$ 7,500,000	$ 15,211,408	$ -	$ 46,875	$ 17,228	$ 5,145,370		

Debt expense and discount were completely amortized over the 10-year period prior to the put date of 9/24/2007

EXHIBIT
A-11

IN THE MATTER OF

SOUTHWEST GAS CORPORATION

Docket No. G-01551A-10-___

PREPARED DIRECT TESTIMONY

OF

ROBERT B. HEVERT

ON BEHALF OF

SOUTHWEST GAS CORPORATION

November 12, 2010

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Description

BEFORE THE ARIZONA CORPORATION COMMISSION

Prepared Direct Testimony
Of
Robert B. Hevert

I. INTRODUCTION

Q. 1 Please state your name, affiliation, and business address.

A. 1 My name is Robert B. Hevert. I am President of Concentric Energy Advisors, Inc. ("Concentric"), located at 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q. 2 On whose behalf are you submitting this testimony?

A. 2 I am submitting this testimony on behalf of Southwest Gas Corporation ("Southwest Gas" or the "Company").

Q. 3 Please describe your educational background and professional experience in the energy and utility industries.

A. 3 I received my Bachelors of Science degree in Finance from the University of Delaware, and my Master's degree in Business Administration from the University of Massachusetts. I also hold the Chartered Financial Analyst designation. I have served as a financial officer of Bay State Gas Company, as well as an executive and manager with other consulting firms (REED Consulting Group and Navigant Consulting, Inc.). I have provided testimony regarding strategic and financial matters, including the cost of capital, before several state utility regulatory agencies as well as the Federal Energy Regulatory Commission on approximately 70 occasions, and have advised numerous energy and utility clients on a wide range of financial and economic issues including both asset and corporate-based transactions. Many of those assignments have included the determination of the cost of capital for valuation purposes. I have provided a summary of my professional and educational background, including a listing of my testimony in prior proceedings in Attachment A to my Direct Testimony.

Q. 4 Please describe Concentric's activities in energy and utility engagements.

A. 4 Concentric provides financial and economic advisory services to many and various energy and utility clients across North America. Our regulatory economic and market analysis services include utility ratemaking and regulatory advisory services; energy market assessments; market entry and exit analysis; corporate and business unit strategy development; demand forecasting, resource planning, and energy contract negotiations. Our financial advisory activities include both buy and sell side merger, acquisition and divestiture assignments, due diligence and valuation assignments, project and corporate finance services, and transaction support services. In addition, we provide litigation support services on a wide range of financial and economic issues on behalf of clients throughout North America.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. 5 What is the purpose of your testimony?

A. 5 The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the Company's return on equity ("ROE").[1] My analyses and recommendations are supported by the data presented in Exhibit No. ___(RBH-1) through Exhibit No. ___(RBH-10), which I or others under my supervision have prepared.

Q. 6 What are your conclusions regarding the appropriate cost of equity for the Company?

A. 6 My analyses indicate that the Company's cost of equity is currently within the range of 10.50 percent to 11.25 percent. I agree with the Commission's position as noted in its recent decision in an Arizona Public Service Company case; that the DCF results alone would not result in an appropriate cost of equity[2]. Therefore, I base my recommendation on the results of several quantitative methodologies and qualitative analyses discussed throughout my Direct Testimony. Considering the results of these analyses, I recommend that the Commission authorize Southwest Gas the opportunity to earn an ROE of 11.00 percent.

Q. 7 Please provide a brief overview of the analysis that led to your ROE recommendation.

A. 7 As discussed in more detail in Section VI, in light of recent and expected capital market conditions, and given the fact that equity analysts and investors tend to use multiple methodologies in developing their return requirements, it is extremely

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1 Throughout my testimony, I interchangeably use the terms "ROE" and "cost of equity."

2 Arizona Corporation Commission Decision No. 69663, Docket No. E-01345A-05-0816, June 28 2007, at 49.

important to consider the results of several analytical approaches in determining the Company's ROE. Therefore, in developing my ROE recommendation, I applied the Constant Growth and Multi-Stage forms of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), and the Risk Premium approach.

In addition to the analyses discussed above, my recommendation also takes into consideration: (1) the regulatory and capital environments in which the Company operates; and (2) the Company's credit rating relative to a group of comparison or "proxy" companies. I also considered the flotation costs associated with equity issuances. While I did not make any explicit adjustments to my ROE estimates for those factors, I did take them into consideration when determining where the Company's ROE falls within the range of analytical results.

Q. 8 How is the remainder of your Direct Testimony organized?

A. 8 The remainder of my Direct Testimony is organized in nine sections. Section III reviews the regulatory guidelines and financial considerations pertinent to the development of the cost of capital. Section IV discusses the current capital market conditions and the effect of those conditions on the Company's cost of equity. Section V explains my selection of a proxy group of gas distribution utilities. Section VI describes my analyses and the analytical basis for the recommendation of the appropriate ROE for Southwest Gas. Section VII provides a discussion of specific regulatory and business risks that have a direct bearing on the ROE to be authorized for the Company in this case. Section VIII discusses the effect of the Company's proposed decoupling mechanism on the ROE. Section IX discusses my analyses and the analytical basis for the recommendation regarding the market return on equity Section X discusses my analysis of the Company's proposed fair value rate base and Section XI discusses the calculation of the fair value rate of return.

III. <u>REGULATORY GUIDELINES AND FINANCIAL CONSIDERATIONS</u>

Q. 9 Please describe the guiding principles to be considered in establishing the cost of capital for a regulated utility.

A. 9 The United States Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the standards for determining the fairness or reasonableness of a utility's allowed ROE. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) the principle that the specific means of arriving at a fair return are not important, only that the end result leads to just and reasonable rates.[3]

Q. 10 Has the Commission provided similar guidance in establishing the appropriate return on common equity?

A. 10 Yes. The Commission has noted that under the Arizona Constitution, a public utility is entitled to a fair return on the fair value of its property devoted to public uses. The Commission is required to find the fair value of the utility's property and to use that value to establish just and reasonable rates.[4]

Q. 11 Why is it important for a utility to be allowed the opportunity to earn a return that is adequate to attract equity capital at reasonable terms?

A. 11 There is a long history of precedent regarding the allowed return on equity, the role of capital structure, and the resulting cost of capital in establishing just and reasonable rates for utility services. Among the themes common to many such decisions is the principle that a utility's cost of capital (including its capital structure and allowed return on common equity) must reflect of other enterprises having comparable risks, and acting independently in the financial markets. As noted elsewhere in my Direct Testimony, a return that is adequate to attract capital at reasonable terms enables the Company to provide safe, reliable natural gas service while maintaining its financial integrity. That return should be commensurate with the returns expected elsewhere in the market for investments of equivalent risk. If it is not, debt and equity investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby impairing the Company's ability to attract capital at reasonable cost rates.

The consequence of the Commission's order in this case, therefore, should be rates that provide the Company with the opportunity to earn a return on equity that is:

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[3] *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia,* 262 U.S. 679 (1923); *Federal Power Commission v. Hope Natural Gas Co.,* 320 U.S. 591 (1944).

[4] Arizona Corporation Commission Order No. W-02113A-04-0616, *Chaparral City Water Company,* February 13, 2007, at 11. References Ariz. Water co., 85 Ariz. at 203, 335, P.2d at 415.

(1) adequate to attract capital at reasonable terms, thereby enabling it to continue to provide safe and reliable natural gas service; (2) sufficient to ensure its financial integrity; and (3) commensurate with returns on investments in enterprises having corresponding risks. To the extent Southwest Gas is provided the opportunity to earn its market-based cost of capital, neither customers nor shareholders are disadvantaged.

IV. CAPITAL MARKET ENVIRONMENT

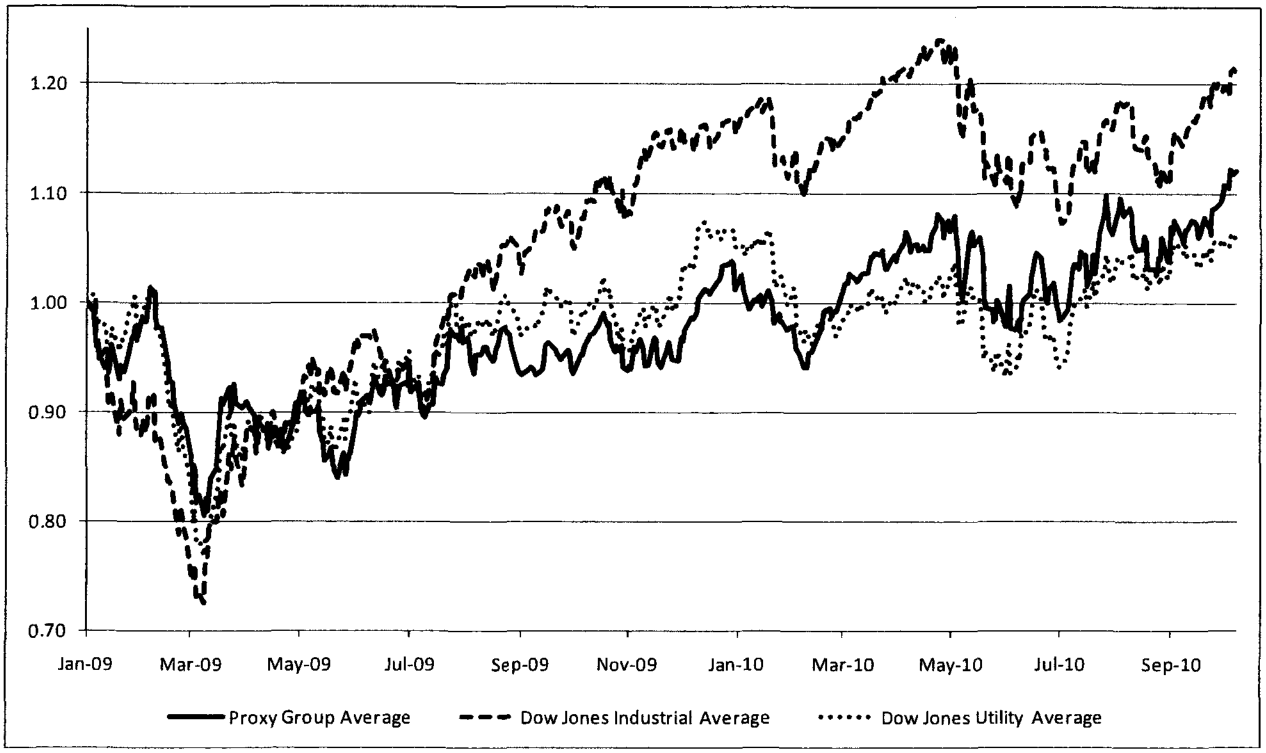
Q. 12 How do economic conditions influence the required cost of capital and required return on common equity?

A. 12 The required cost of capital, including the ROE, is a function of prevailing and expected financial market conditions. Consistent with the *Hope* and *Bluefield* decisions, the authorized ROE for a public utility should allow the company to attract investor capital at reasonable cost under a variety of economic and financial market conditions. The ability to attract capital on reasonable terms is especially important for capital-intensive businesses such as utilities. As such, the Commission's order regarding both the return on equity and the capital structure will have a direct bearing on the Company's financial profile and, therefore, its ability to attract capital at reasonable terms.

Q. 13 How have the recent capital market conditions affected the availability and cost of equity capital?

A. 13 The widely discussed financial market crisis and the following recession led to a general decrease in the availability of, and an increase in, the cost of equity capital for all market sectors, including utilities. From the perspective of equity investors, both the Dow Jones Utility Average and the proxy group used in my analyses have considerably under-performed the general market since the beginning of 2009 (*see* Chart 1, below).

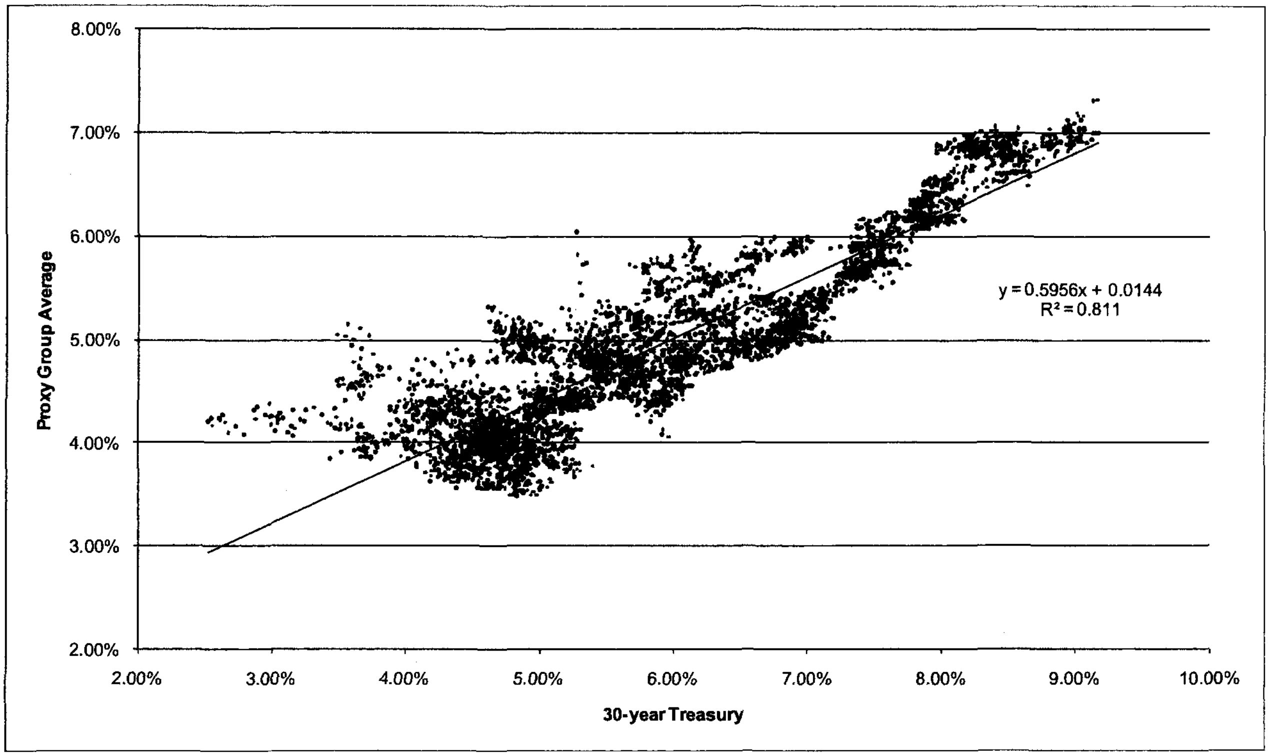
Chart 1: Relative Price Performance 1/1/2009 – 10/8/2010



Q. 14 Does the potential for increasing interest rates represent a source of risk to utilities?

A. 14 Yes, the potential for rising interest rates represents a significant source of risk for utilities. Equity analysts such as Barclays have pointed out the potentially dilutive effects of accessing the capital markets during periods of rising construction costs and increased interest rates. The fact that capital-intensive companies trade inversely to interest rates has long been recognized by the financial community. Value Line, for example, establishes "price targets" based on the ratio of dividends to interest rates; as interest rates increase, the price target declines, resulting in an increased dividend yield. Consistent with Value Line's methodology, as shown in Chart 2 (below), there is a strong statistical relationship between the proxy group companies' average dividend yield and the 30-year Treasury yield.

Chart 2: Proxy Group Average Dividend Yield vs. 30-Year Treasury Yield



Given the historically low level of long-term Treasury rates, it is reasonable to assume that on balance, long-term rates are more likely to increase than decrease in the intermediate to long term. In fact, the Blue Chip Financial Forecast consensus projected 30-year Treasury yield for the years 2013 and 2014 are 5.70 percent and 5.90 percent,[5] respectively, while the 30-day average long-term Treasury yield (*i.e.*, the yield on 30-year Treasury securities) was approximately 3.75 percent as of October 8, 2010. The projected increase of approximately 195 to 215 basis points represents a significant element of market risk for equity valuations of utility companies.

Q. 15 What are the implications of current market conditions on the company's cost of equity?

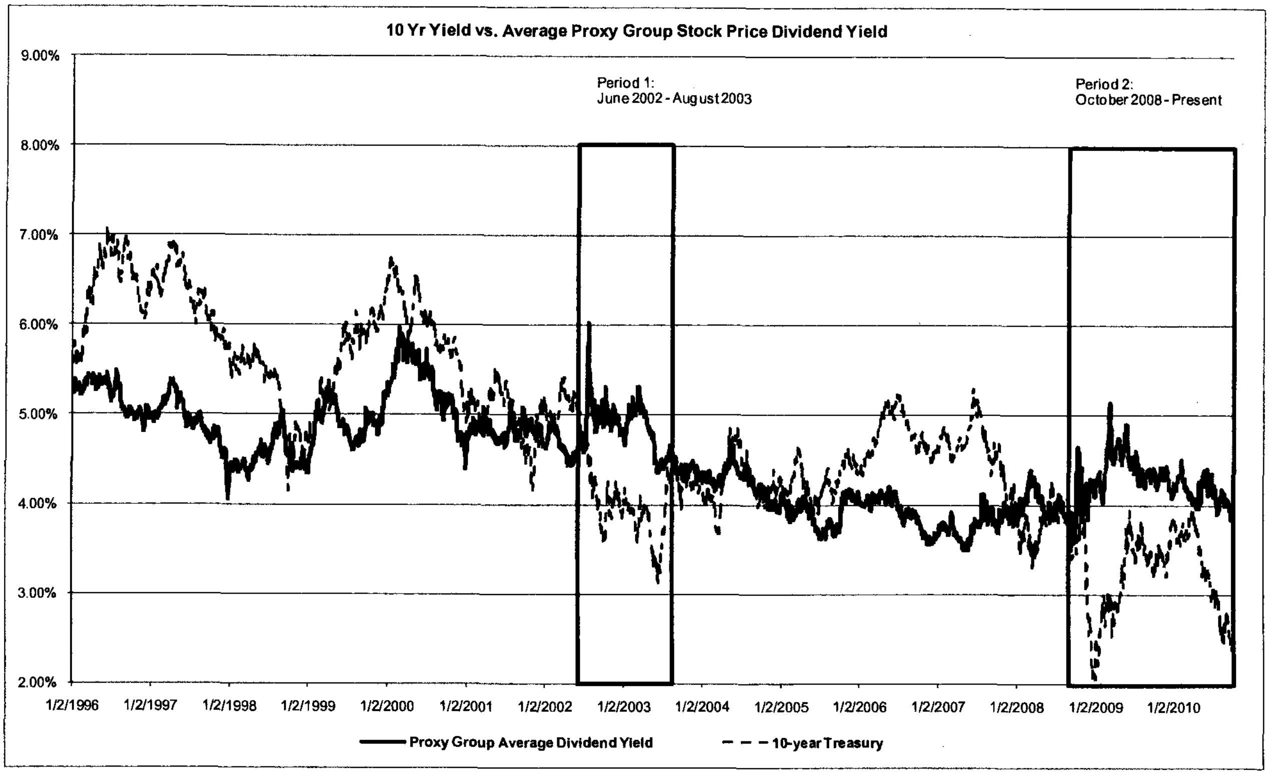
A. 15 In general, while capital market conditions have moderated since the height of the financial crisis, there remain elevated levels of uncertainty and risk aversion on the part of equity investors. As a consequence, the cost of capital remains high relative to the levels observed before the third quarter of 2008.

[5] Blue Chip Financial Forecast, Vol. 29, No. 6, June 1, 2010, at 14.

Q. 16 What analysis have you conducted to assess current capital market conditions?

A. 16 Because Treasury security interest rates remain at historically low levels, I examined the relationship between the interest rate on ten-year Treasury notes and the dividend yield of my proxy group over time.

Chart 3: Treasury Yield/Dividend Yield Inversion



As shown in Chart 3, the 2008 – 2009 financial dislocation created the inversion (wherein, as opposed to its typical relationship, the dividend yield exceeded the Treasury yield) of the ten year Treasury yield relative to the proxy group average dividend yield in five years. The most recent period during which these yields were significantly inverted was the period from mid-2002 through mid-2003, which likewise was a period of credit and equity valuation contraction.

A 2009 article in The Wall Street Journal described this same inverted relationship between utility dividend yields and the ten-year Treasury yield, noting that:

> ...dividend yields have tended to track the yield on 10-year Treasurys closely. Since 1970, the spread of regulated utilities' dividend yields over Treasury yields has averaged 0.24

> percentage point. Today, with utilities yielding about 5.65%, the spread is 10 times that, having peaked in March at 3.75 percentage points. You have to go all the way back to the early 1980s for the last time it reached such heights.
>
> ***
>
> Regulated utilities' dividend yields decoupled from Treasury yields in December 2007, as the U.S. recession began. After the initial flight to quality cut yields on Treasurys, particularly after Lehman Brothers collapsed in September 2008, the Federal Reserve's policy of buying up government debt has helped keep them low.[6]

Significantly, that inversion of dividend yield relative to the ten-year Treasury has continued unabated since that article was published, demonstrating the extraordinarily low level of Treasury yields discussed previously and the continuing high level of capital market uncertainty.

Q. 17 What conclusions do you draw from these analyses?

A. 17 These analyses demonstrate that the current capital market continues to experience high levels of risk aversion, and dislocation. The result, of course, is an increased, not a decreased cost of equity. As noted in the June 2010 Federal Reserve Open Market Committee ("FOMC") Minutes, during the period from April to June 2010, "[t]he spread between the staff's estimate of the expected real return on equities over the next 10 years and an estimate of the expected real return on a 10-year Treasury note—a measure of the equity risk premium—increased from its already elevated level."[7]

Finally, while certain capital market indices have moderated since the height of the financial crisis, both debt and equity investors are concerned with the potential that rising interest rates could result in a diminished financial profile for utility companies. This concern is particularly relevant because interest rates are projected to increase, thereby placing additional pressure on cash flow metrics and credit quality for utility companies such as Southwest Gas. Under such conditions, regulatory policies that are perceived as unsupportive of credit quality may well add to investors' views of relative risk. To the extent that is the case, the Commission's

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6 *A Short Circuit in the Stock Market*, The Wall Street Journal, Liam Denning, October 23, 2009, at C10.

7 Federal Open Market Committee, Minutes of the Meeting of June 22-23, 2010, at 6.

decision in this proceeding would have a direct bearing on the Company's overall cost of capital.

Q. 18 How should current economic conditions and capital spending plans be taken into consideration in determining the appropriate ROE for the Company?

A. 18 In my view, the authorized rate of return in this proceeding will provide a signal to the financial community concerning the ability of the Company to meet its capital needs during a period in which its capital investments are increasing, and both debt and equity investors are requiring higher rates of return. If investors perceive a supportive regulatory environment, as evidenced by an allowed rate of return that compensates the Company at a level commensurate with its risk, the Company should be able to attract equity capital at a reasonable cost.

V. PROXY GROUP SELECTION

Q. 19 Please explain why you have used a group of proxy companies to determine the cost of equity for Southwest Gas.

A. 19 First, it is important to bear in mind that the cost of equity for a given enterprise depends on the risks attendant to the business in which the company is engaged. According to financial theory, the aggregate value of a given company is equal to the market value weighted average of the constituent business units. The value of the individual business units reflects the risks and opportunities inherent in the business sectors in which those units operate. In this proceeding, I am estimating the cost of equity for the Arizona jurisdictional gas distribution operations of Southwest Gas, a rate-regulated, public service corporation. Since the ROE is a market-based concept, and given the fact that Southwest Gas's Arizona jurisdictional operations do not make up the entirety of the publicly traded entity, it is necessary to establish a group of companies that are both publicly traded and comparable to Southwest Gas in certain fundamental business and financial respects to serve as its "proxy" for purposes of the ROE estimation process.

Even if Southwest Gas's Arizona jurisdictional operations made up the entirety of the publicly traded entity, it is possible that transitory events could bias its market value in one way or another over a given period of time. A significant benefit of using a proxy group, therefore, is its ability to mitigate the effects of anomalous events that may be associated with any one company. As discussed later in my Direct Testimony, the proxy companies used in my analyses all possess a set of operating and risk characteristics that are substantially comparable to Southwest Gas's gas distribution operations, and thus provide a reasonable basis for the derivation and assessment of ROE estimates.

The importance of selecting a proxy group that is similar in overall financial and business risk to the subject company was endorsed by the United States Court of Appeals for the District of Columbia (the "Court of Appeals") in the *Petal Gas Storage* decision. The Court of Appeals acknowledged that the goal of a proxy group is to rely on companies that possess similar risk to the subject company for the determination of the cost of equity:

> That proxy group arrangements must be risk-appropriate is the common theme in each argument. The principle is well-established. *See Hope Natural Gas Co.*, 320 U.S. at 603 ("[T]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."); *CAPP I*, 254 F.3d at 293 ("[A] utility must offer a risk-adjusted expected rate of return sufficient to attract investors."). The principle captures what proxy groups do, namely, provide market-determined stock and dividend figures from public companies comparable to a target company for which those figures are unavailable. *CAPP I*, 254 F.3d at 293–94. Market determined stock figures reflect a company's risk level and, when combined with dividend values, permit calculation of the "risk-adjusted expected rate of return sufficient to attract investors."[8]
>
> ***
>
> What matters is that the overall proxy group arrangement makes sense in terms of relative risk and, even more importantly, in terms of the statutory command to set "just and reasonable" rates, 15 U.S.C. § 717c, that are "commensurate with returns on investments in other enterprises having corresponding risks" and "sufficient to assure confidence in the financial integrity of the enterprise . . . [and] maintain its credit and . . . attract capital," *Hope Natural Gas Co.*, 320 U.S. at 603.[9]

[8] *Petal Gas Storage v. FERC*, 496 F.3d 695, 699 (D.C. Cir. 2007).
[9] *Ibid.*, at 7.

Thus, regulatory commissions and analysts alike recognize the importance of developing a proxy group that adequately represents the ongoing risks and prospects of the subject company.

Q. 20 Does the rigorous selection of a proxy group suggest that analytical results will be tightly clustered around average (*i.e.*, mean) results?

A. 20 Not necessarily. As discussed in greater detail in Section VI, the DCF approach is based on the theory that a stock's current price represents the present value of its expected future cash flows. For example, the Constant Growth form of the DCF model is defined as the sum of the expected dividend yield and projected long-term growth. Notwithstanding the care taken to ensure risk comparability, market expectations with respect to future risks and growth opportunities will vary from company to company. Therefore, even within a group of similarly situated companies, it is common for analytical results to reflect a seemingly wide range. At issue, then, is how to select an ROE estimate in the context of that range. As discussed throughout my Direct Testimony, that determination must necessarily be based on an assessment of the company-specific risks relative to the proxy group, as well as the informed judgment and experience of the analyst.

Q. 21 Please provide a brief profile of Southwest Gas.

A. 21 Southwest Gas provides natural gas distribution service to approximately 976,000 customers in Arizona.[10] The Company also has operations in Nevada and California serving a total of approximately 1,824,000 customers. Operating income from gas distribution operations accounted for 93.62 percent of Southwest Gas's total operating income in 2009.[11] Southwest Gas Corporation currently has Long Term Issuer credit ratings from S&P of BBB (Outlook: Positive), from Moody's of Baa2 (Outlook: Stable) and from Fitch Ratings of BBB (Outlook: Positive).

Q. 22 How did you select the companies included in your proxy group?

A. 22 The proxy group was selected based on the following criteria:

- I began with the group of 12 companies that currently are classified as Natural Gas Utilities by Value Line. Those companies include: AGL Resources Inc.,

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[10] Direct Testimony of Randi L. Aldridge.

[11] Southwest Gas 2009 SEC Form 10-K, at 66.

Atmos Energy Corp., Laclede Group, Inc., New Jersey Resources Corp., Nicor, Inc., NiSource Inc., Northwest Natural Gas Co., Piedmont Natural Gas Co., South Jersey Industries, Inc., Southwest Gas Corp., UGI Corp., and WGL Holdings, Inc.;

- I eliminated companies that did not have long-term growth forecasts from at least two utility industry equity analysts; and
- To incorporate companies that are primarily regulated gas distribution utilities, I have only included companies with at least 60.00 percent of net operating income from regulated natural gas utility operations.

While I did not include specific criteria regarding credit rating and merger activities, I note that all of the companies included in the Value Line segment have investment grade credit ratings, and none are currently involved in a transformational merger or transaction. Consequently, none of the potential proxy companies would have been eliminated on those bases.

Q. 23 Did you include Southwest Gas Corporation in your analysis?

A. 23 No. In order to avoid the circular logic that otherwise would occur, it is my practice to exclude the subject company, or its parent holding company, from the proxy group.

Q. 24 Based on those criteria, what was the composition of your final proxy group?

A. 24 The criteria discussed above resulted in a proxy group consisting of the nine companies provided in Table 1 (below).

Table 1: Proxy Group

Company	Ticker
AGL Resources Inc.	AGL
Atmos Energy Corp.	ATO
Laclede Group, Inc.	LG
Nicor, Inc.	GAS
New Jersey Resources Corp.	NJR
Northwest Natural Gas Co.	NWN
Piedmont Natural Gas Co. Inc.	PNY
South Jersey Industries, Inc.	SJI
WGL Holdings, Inc.	WGL

Q. 25 Do you believe that a total of nine companies constitutes a sufficiently large proxy group?

A. 25 Yes, I do. The analyses performed in estimating the ROE are more likely to be representative of the subject utility's cost of equity to the extent that the chosen proxy companies are fundamentally comparable to the subject utility. Because all analysts use some form of screening process to arrive at a proxy group, the group, by definition, is not randomly drawn from a larger population. Consequently, there is no reason to place more reliance on the quantitative results of a larger proxy group simply by virtue of the resulting larger number of observations.

Moreover, because I am using market-based data, my analytical results will not necessarily be tightly clustered around a central point. Results that may be somewhat dispersed, however, do not suggest that the screening approach is inappropriate or the results less meaningful. In my view, including companies whose fundamental comparability is tenuous at best simply for the purpose of expanding the number of observations does not add relevant information to the analysis.

VI. COST OF EQUITY ESTIMATION

Q. 26 Please briefly discuss the ROE in the context of the regulated rate of return.

A. 26 Regulated utilities primarily use common stock and long-term debt to finance their permanent property, plant, and equipment. The overall rate of return ("ROR") for a regulated utility is based on its weighted average cost of capital, in which the cost rates of the individual sources of capital are weighted by their respective book values. While the costs of debt and preferred stock can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market information.

Q. 27 How is the required ROE determined?

A. 27 The required ROE is estimated by using one or more analytical techniques that rely on market-based data to quantify investor expectations regarding required equity returns, adjusted for certain incremental costs and risks. By their very nature, quantitative models produce a range of reasonable results from which the market required ROE is selected. As discussed throughout my Direct Testimony, that selection must be based on a comprehensive review of relevant data and information, and does not necessarily lend itself to a strict mathematical solution. As a general proposition, the key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' view of the financial markets in general, and the subject company (in the context of the proxy group) in particular.

Q. 28 Why do you believe it is important to use more than one analytical approach?

A. 28 When faced with the task of estimating the cost of equity, analysts are inclined to gather and evaluate as much relevant data (both quantitative and qualitative) as can be reasonably analyzed. For that reason, Concentric employs multiple approaches to estimate the cost of equity used in performing valuation analyses in the context of our financial advisory and transaction practices. In addition, as a practical matter all of the models available to estimate the cost of equity are subject to limiting assumptions or other methodological constraints, many of which are inconsistent with the actual conditions prevailing in the marketplace. Consequently, many finance texts recommend using multiple approaches when estimating the cost of equity. Copeland, Koller and Murrin,[12] for example, suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[13] recommend the CAPM, DCF and "Bond Yield plus Risk Premium" approaches.

Although we cannot directly observe the cost of equity, we can observe the methods frequently used by analysts to arrive at their return requirements and expectations. While investors and analysts tend to use multiple approaches in developing their estimate of return requirements, each methodology requires certain judgment with respect to the reasonableness of assumptions and the validity of proxies in its application. In essence, analysts and academics understand that ROE models are tools to be used in the ROE estimation process and that strict adherence to any single approach, or the specific results of any single approach, can lead to flawed and irrelevant conclusions. That position is consistent with the *Hope* and *Bluefield*

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12 Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd ed. (New York: McKinsey & Company, Inc., 2000), at 214.

13 Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

finding that it is the analytical result, as opposed to the methodology, that is controlling in arriving at ROE determinations. A reasonable ROE estimate therefore considers alternative methodologies, observable market data, and the reasonableness of their individual and collective results.

In my view, therefore, it is both prudent and appropriate to use multiple methodologies in order to mitigate the effects of assumptions and inputs associated with relying exclusively on any single approach. Such use, however, must be tempered with due caution as to the results generated by each individual approach. Therefore, in light of the capital market practices discussed above, I have considered the results of the Constant Growth and Multi-Stage form of the DCF model, the Capital Asset Pricing Model, and the Risk Premium approach.

A. Constant Growth DCF Model

Q. 29 Are DCF models widely used to determine the ROE for regulated utilities?

A. 29 Yes. DCF models are widely used in regulatory proceedings and have sound theoretical bases, although neither the DCF model nor any other model can be applied without considerable judgment in the selection of data and the interpretation of results. In a previous Southwest Gas rate order, the Commission stated that the:

> [u]se of the DCF as the primary basis for determining the Company's reasonable estimated cost of equity capital is a methodology that has been used for many years by this Commission, as well as other regulatory commissions across the country.[14]

In its simplest form, the DCF model expresses the cost of equity as the sum of the expected dividend yield and long-term growth rate.

Q. 30 Please describe the DCF approach.

A. 30 The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

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[14] *In the Matter of the Application of Southwest Gas Corporation for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return of the Fair Value of its Properties of Southwest Gas Corporation Devoted to its Operations throughout Arizona,* Opinion and Order, Arizona Corporation Commission, Docket No. G-01551A-04-0876. February 23, 2006 at 29.

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

where:

P_0 = the current stock price;

$D_1 \ldots D_\infty$ = all expected future dividends; and

k = the discount rate or required ROE.

Equation [1] is a standard present value calculation that can be simplified and rearranged into the familiar form:

$$k = \frac{D(1+g)}{P_0} + g \quad [2]$$

Equation [2] is often referred to as the "Constant Growth DCF" model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

Q. 31 What assumptions are required for the Constant Growth DCF model?

A. 31 The Constant Growth DCF model is predicated on the following assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings multiple; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions is violated, the need to apply considered judgment and/or specific adjustments to the model's results is increased.

B. Dividend Yield for the Constant Growth DCF Model

Q. 32 What market data did you use to calculate the dividend yield in your Constant Growth DCF model?

A. 32 The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annual dividend and average closing stock prices over the 30-, 90- and 180-trading days ended October 8, 2010.

Q. 33 Why did you use three averaging periods?

A. 33 I believe it is important to use an average of trading days to calculate the term P_0 in the DCF model to ensure that the calculated ROE is not skewed by anomalous events that may affect stock prices on any given trading day. In that regard, the averaging period should be reasonably representative of expected capital market conditions over the long term. At the same time, it is important to reflect the volatile conditions definitive of the financial markets over the recent past. In my view, the use of the 30, 90, and 180- day averaging periods reasonably balances those concerns.

Q. 34 Putting aside the issue of the averaging period, did you make any adjustments to the dividend yield to account for periodic growth in dividends?

A. 34 Yes. Since utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time. Accordingly, the DCF estimates provided in Exhibit No. ___(RBH-1) reflect one-half of the expected growth in the dividend yield component of the model.

C. Growth Rates for the DCF Model

Q. 35 Why is it important to select appropriate measures of long-term growth in applying the Constant Growth DCF model?

A. 35 In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. In order to reduce the long-term growth rate to a single measure, one must assume a constant payout ratio, and that earnings per share, dividends per share and book value per share all grow at the same constant rate. This can be accomplished by averaging those measures of long-term growth that tend to be least influenced by capital allocation decisions that companies may make in response to near-term changes in the business environment. Since such decisions may directly affect near-term dividend payout ratios, estimates of earnings growth are more indicative of long-term investor expectations than are dividend or book value growth estimates. Over the long term dividend growth can only be sustained by earnings growth, and as such, it is important to incorporate a variety of measures of long-term earnings growth into the Constant Growth DCF model. Therefore, for the purposes of the Constant Growth form of the DCF model, growth in earnings per share represents the appropriate measure of long-term growth.

Q. 36 Please describe the retention growth estimate as applied in your Constant Growth DCF.

A. 36 The Retention Growth model, which is a generally recognized and widely taught method of estimating long-term growth, is an alternative approach to the use of analysts' earnings growth estimates. In essence, the model is premised on the proposition that a firm's growth is a function of its expected earnings, and the extent to which it retains earnings to invest in the enterprise. In its simplest form, the model represents long-term growth as the product of the retention ratio (*i.e.*, the percentage of earnings not paid out as dividends, referred to below as ("b") and the expected return on book equity (referred to below as ("r")). Thus, the simple "b x r" form of the model projects growth as a function of internally generated funds. That form of the model is limiting, however, in that it does not provide for growth funded from external equity.

The "br + sv" form of the Retention Growth estimate used in my DCF analysis is meant to reflect growth from both internally generated funds (*i.e.*, the "br" term) and from issuances of equity (*i.e.*, the "sv" term). The first term, which is the product of the retention ratio (*i.e.*, "b", or the portion of net income not paid in dividends) and the expected return on equity (*i.e.*, "r") represents the portion of net income that is "plowed back" into the Company as a means of funding growth. The "sv" term can be represented as:

$$\left(\frac{m}{b}-1\right) \text{ x Common Shares growth rate} \quad [3]$$

where:

$\frac{m}{b}$ = the Market to Book ratio.

In this form, the "sv" term reflects an element of growth as the product of (a) the growth in shares outstanding, and (b) that portion of the market-to-book ratio that exceeds unity. As shown in Exhibit No. ___(RBH-2), all of the components of the Retention Growth Model can be derived from data provided by Value Line.

Q. 37 Please summarize your inputs to the Constant Growth DCF model.

A. 37 I applied the Constant Growth DCF model to the proxy group of nine gas distribution companies using the following inputs for the price and dividend terms:

1. The average daily closing prices for the 30-, 90-, and 180-trading days ended October 8, 2010 for the term P_0; and
2. The annualized dividend per share as of October 8, 2010 for the term D_0.

I then calculated the DCF results using each of the following growth terms:

1. The Zacks consensus long-term earnings growth estimates;
2. The First Call consensus long-term earnings growth estimates;
3. The Value Line long-term earnings growth estimates; and
4. The projected Retention Growth rates.

D. Multi-Stage DCF Model

Q. 38 What other forms of the DCF model have you considered?

A. 38 In order to address some of the limiting assumptions underlying the Constant Growth form of the DCF model, I also considered the results of a multi-period (three-stage) Discounted Cash Flow Model. The multi-stage model, which is an extension of the Constant Growth form, enables the analyst to specify growth rates over three distinct stages. As with the Constant Growth form of the DCF model, the multi-period form defines the cost of equity as the discount rate that sets the current price equal to the discounted value of future cash flows. Unlike the Constant Growth form, however, the multi-period model must be solved in an iterative fashion.

Q. 39 Please generally describe the structure of your multi-stage model.

A. 39 As noted above, the model sets the subject company's stock price equal to the present value of future cash flows received over three "stages." In the first two stages, cash flows are defined as projected dividends. In the third stage, cash flows equal both dividends and the expected price at which the stock will be sold at the end of the period. I employed two different methods to estimate the expected terminal stock price. The first approach is based on the Gordon model, which defines the price as the expected dividend divided by the difference between the cost of equity (*i.e.*, the discount rate) and the long-term expected growth rate. The second approach estimates the terminal stock price based on the projected average annual price-to-earnings ("P/E") ratio provided by Value Line. The expected price is the product of the earnings per share estimate for the final year and the projected P/E ratio. In each of the three stages, the dividend is the product of the projected earnings per share and the expected dividend payout ratio. A summary description of the model is provided in Table 2 (below).

Table 2: Multi-Stage DCF Structure

Stage	**0**	**1**	**2**	**3**
Cash Flow Component	Initial Stock Price	Expected Dividend	Expected Dividend	Expected Dividend + Terminal Value
Inputs	Stock Price Earnings Per Share ("EPS") Dividends Per Share ("DPS")	Expected EPS Expected DPS	Expected EPS Expected DPS	Expected EPS Expected DPS Terminal Value
Assumptions	30, 90, and 180-day average stock price	EPS growth rate Payout ratio		Long-term growth rate

Q. 40 What are the specific benefits of a three-stage model?

A. 40 Because the second stage allows for a transition from the first stage growth rate to the long-term growth rate, the three-stage model avoids the often unrealistic assumption that growth will change immediately between the first and final stages. Additionally, because the model projects dividends as the product of earnings per share and the payout ratio, it provides the important ability to recognize that payout ratios may change over time.

It also is very important to note that while the model calculates the cost of equity based on expected dividends, it does not rely solely on Value Line for dividend growth rate projections. A common and legitimate criticism of DCF models that rely on projected dividend growth rates (especially in the Constant Growth form of the model) is that Value Line is the sole source of such projections.[15] While the form of the three-stage model I have used relies on Value Line for projected payout and P/E ratios, the potential bias resulting from reliance on a single analyst is mitigated by the use of consensus earnings forecasts. The model also enables the analyst to assess the reasonableness of the inputs and results by reference to certain market-based metrics. For example, when using the Gordon model approach to estimate the terminal price, the stock price estimate can be divided by the expected earnings per share in the final year to calculate an average P/E ratio. To the extent that the projected P/E ratio is inconsistent with either historical or expected levels, it may indicate incorrect or inconsistent assumptions within the balance of the model.

Q. 41 Please summarize your inputs to the Multi-Period DCF model.

A. 41 I applied the multi-period model to the proxy group described earlier in my Direct Testimony. My assumptions with respect to the various model inputs are described in Table 3 (below).

[15] *Ibid. See*, for example, Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, 21 (Summer 1992).

Table 3: Multi-Stage DCF Model Assumptions

Stage	0	1	2	3
Stock Price	30, 90, and 180-day average stock price as of October 8, 2010			
Earnings Growth	EPS as reported by Value Line	EPS growth as average of (1) Value Line, (2) Zacks, and (3) First Call projected growth rates	Transition to Long-term GDP growth on geometric average basis	Long-term GDP growth
Payout Ratio		Value Line company-specific	Transition to industry average payout ratio (Value Line) on a geometric average basis	Industry average (Value Line)
Terminal Value				Expected dividend in final year divided by solved cost of equity less long-term growth rate or expected EPS in final year multiplied by Value Line projected P/E ratio

Q. 42 How did you calculate the long-term GDP growth rate?

A. 42 The long-term growth rate of 5.83 percent is based on the real GDP growth rate of 3.28 percent from 1929 through 2009,[16] and an inflation rate of 2.47 percent. The GDP growth rate is calculated as the compound growth rate in the chain-weighted GDP for the period from 1929 through 2009.[17] The rate of inflation of 2.47 percent is based on the average of the long-term projected growth rate in the Consumer Price Index ("CPI") for all urban consumers, as reported by Blue Chip Economic Indicators

16 Source: Bureau of Economic Analysis

17 The growth rate in CPI as reported by the Energy Information Administration in the 2010 Annual Energy Outlook, Table A20.

of 2.50 percent[18] and the compound annual CPI growth rate of 2.45 percent projected by the Energy Information Administration ("EIA") in the 2010 Annual Energy Outlook.[19]

Q. 43 What were your specific assumptions with respect to the payout ratio?

A. 43 As noted in Table 3, for the first two periods I relied on the first year and long-term projected payout ratios reported by Value Line[20] for each of the proxy group companies. I then assumed that the long-term payout ratios for the proxy group will converge to the long-term average payout ratio of the natural gas distribution companies as reported by Value Line. The long-term average payout ratio for this industry segment is 71.18 percent.

Q. 44 Did you also consider the alternative analysis in which the terminal value was calculated based on the expected price/earnings ratio?

A. 44 Yes, I also considered the results of estimating the terminal stock price based on the expected earnings per share in the final year and the projected P/E ratio as provided by Value Line. The summary of the Multi-Stage model's results that appear in Table 4 (below) presents the ROE estimates using both terminal stock price estimation techniques.

E. Discounted Cash Flow Model Results

Q. 45 Please summarize the results of your DCF analyses.

A. 45 Table 4 (below), (*see* also Exhibit No. ___(RBH-1) and Exhibit No. ___(RBH-3)), presents the results of the Constant Growth and Multi-Stage DCF analyses. Setting aside the low results, the Constant Growth DCF model produces a range of results from 8.39 percent to 9.71 percent. Using the Gordon model to calculate the terminal stock price, the Multi-Stage DCF analysis produces a range of results from 10.48 percent to 10.66 percent, while using the long-term P/E model to calculate the

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18 Blue Chip Financial Forecasts, Vol. 29, No. 6, June 1, 2010, at 14. The long-term average growth rate in CPI is for the period from 2017 through 2021.

19 EIA 2010 Annual Energy Outlook, Table A20. Macroeconomic Indicators. Please note that 5.83% = [(1+3.28%) x (1+2.47%)]-1.

20 As reported in the December 11, 2009 Value Line Investment Survey for Gas Distribution Utilities as "All Div'ds to Net Prof."

terminal stock price, the Multi-Stage analysis produces a range of results from 10.08 percent to 10.49 percent.

Table 4: Discounted Cash Flow Analyses Results

	Mean Low	Mean	Mean High
Constant Growth DCF			
30-Day Average	7.43%	8.39%	9.55%
90-Day Average	7.54%	8.50%	9.65%
180-Day Average	7.59%	8.55%	9.71%
Multi-Stage DCF	**Long-Term P/E Model**	**Mean**	**Gordon Model**
30-Day Average	10.08%	10.28%	10.48%
90-Day Average	10.36%	10.48%	10.60%
180-Day Average	10.49%	10.58%	10.66%

Q. 46 Referring to your Constant Growth DCF model, how did you calculate the mean high and mean low results?

A. 46 I calculated the mean high result for my Constant Growth DCF model using the maximum growth rate (*i.e.*, the maximum of the Zacks, First Call, and Value Line EPS growth rates together with the Retention Growth rate) in combination with the dividend yield for each of the proxy group companies. Thus, the mean high result reflects the maximum DCF result for the proxy group. I used a similar approach to calculate the mean low results, using the minimum growth rate for each proxy group company.

Q. 47 Did you give the Constant Growth DCF results specific weight in arriving at your ROE recommendation?

A. 47 No, I did not. As a practical matter, there is no reasonable benchmark that could rationalize a mean result as low as 8.55 percent. That is especially true given the continuing level of volatility and uncertainty that persist in the equity markets. Those findings lead me to believe that the models underlying assumptions have so deviated from market reality that its results cannot be considered a reasonable and reliable estimate of the Company's cost of equity. Furthermore, I note that my conclusion in this regard is consistent with the Commission's position in the recent Arizona Public

Service case; that the DCF results (based on the Constant Growth version of the DCF model) would not result in an appropriate cost of equity.[21]

Q. 48 Referring now to your Multi-Stage DCF model, are those results consistent with other market indices?

A. 48 Yes, they are. Based on the assumptions described earlier, when using the Gordon model method to estimate the terminal price, the Multi-Stage model produces average P/E multiples of 15.77 to 16.45 (depending upon the stock price averaging period). This range is consistent with the projected proxy group average P/E ratio of 13.00 to 18.00 for 2013 through 2015.[22]

Q. 49 Did you undertake any additional analyses to support your DCF model results?

A. 49 Yes. As noted earlier, I also used the CAPM and the Risk Premium approach as a means of assessing the reasonableness of my DCF results.

F. CAPM Analysis

Q. 50 Please briefly describe the general form of the Capital Asset Pricing Model.

A. 50 The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or "systematic" risk of that security). As shown in Equation [4], the CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \quad [4]$$

where:

K_e = the required market ROE;

β = Beta of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market as a whole.

In this specification, the term $(r_m - r_f)$ represents the market risk premium. According to the theory underlying the CAPM, since unsystematic risk can be

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21 Arizona Corporation Commission, Docket No. E-01345A-05-08816, Decision No. 69663, June 28, 2007, at 49.

22 Projected P/E ratios provided by Value Line.

diversified away, investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by Beta, which is defined as:

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \quad [5]$$

The variance of the market return, noted in Equation [5], is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the market reflects the extent to which the return on that security will respond to a given change in the market return. Thus, Beta represents the risk of the security relative to the market.

Q. 51 What risk-free rate did you use in your CAPM model?

A. 51 Since both the DCF and CAPM models assume long-term investment horizons, I used the current 30-day average yield on 30-year Treasury bonds (*i.e.*, 3.75 percent) and the near-term projected 30-year Treasury yield (*i.e.*, 4.22 percent) as my estimate of the risk-free rate.

Q. 52 What market risk premium did you use in your CAPM model?

A. 52 I used two expected (*ex-ante*) measures of the Market Risk Premium. My first *ex-ante* estimate is based on the expected return on the S&P 500 Index, less the current 30-year Treasury bond yield. The expected return on the S&P 500 is calculated using the Constant Growth DCF model discussed earlier in my testimony for the companies in the S&P 500 index for which long-term earnings projections are available (the companies with such projections represent 97.22 percent of the index market capitalization). Based on an estimated weighted-index dividend yield of 1.88 percent and a weighted-index long-term growth rate of 11.17 percent, the estimated required market return for the S&P 500 index is approximately13.16 percent. The implied Market Risk Premium over the current 30-day average of the 30-year Treasury yield of 3.75 percent is approximately 9.42 percent.

The second *ex-ante* approach assumes a constant Sharpe Ratio, which is the ratio of the Risk Premium relative to the risk, or standard deviation of a given security or index of securities. As shown in Exhibit No. ___(RBH-4), the constant Sharpe Ratio is the ratio of the historical risk premium of 6.70 percent and the historical market volatility of 20.40 percent (0.067/0.2040 = 0.3285 or 32.85 percent).[23] The expected Risk Premium is then calculated as the product of the Sharpe Ratio and the expected market volatility. For the purpose of that calculation, I relied on the average of the settlement price of futures on the Chicago Board Options Exchange Volatility Index (the "VIX"), which is a widely recognized measure of market volatility, for February through April 2011 and the thirty day average of the three-month volatility index (*i.e.*, the "VXV"), which resulted in expected market volatility of 30.26 percent. The expected Risk Premium using this approach is 9.94 percent (0.3026 x 0.3285= 0.994).

Q. 53 What Beta did you use in your CAPM model?

A. 53 With respect to Beta, I considered two methods of calculation. My first approach simply employs the average reported Beta from Bloomberg and Value Line for the proxy group companies. While both of those services adjust their calculated (or "raw") Betas to reflect the tendency of Beta to regress to the market mean of 1.00, Value Line calculates Beta over a five year period, while Bloomberg's calculation is based on two years of data. As discussed below, however, current market conditions are such that the volatility of the proxy group stock prices has been increasing relative to the broad market. Consequently, Betas calculated over a more recent time period provide a more current view as to investors' perspectives with respect to "systematic" risk.

Q. 54 Please describe how you calculated the mean adjusted beta for your proxy group.

A. 54 As noted in Equation 5, Beta is calculated as the ratio of the covariance between the individual security returns and the market returns, to the variance of the market returns. To arrive at a single estimate of Beta for the proxy group, I first calculated the covariance between the weekly returns for each of the nine companies in the proxy group and the weekly returns for the S&P 500 for the most recent twelve-month period. The average of those nine covariances for a given date produces the numerator of the Beta calculation for the proxy group. As noted above, the

[23] The standard deviation is easily calculated from the Morningstar data. *See* also Morningstar Inc., 2010 Ibbotson Stocks, Bonds, Bills and Inflation, Valuation Yearbook, Large Company Stocks: Total Returns Table B-1, at 166-167.

denominator in the calculation is the variance of weekly returns for the S&P 500.[24] As shown in Exhibit No. ___(RBH-5), this methodology results in a proxy group mean raw Beta of 0.814. Adjusting the raw Beta for the tendency to regress toward the market Beta of 1.0 results in an adjusted Beta of 0.876.

Q. 55 How and why did you adjust the raw Beta?

A. 55 I adjusted my raw Beta consistent with the methodology used by Bloomberg. This approach multiplies the raw Beta by 0.67, and adds 0.33 to that product. The purpose of such adjustments is to reflect the results of substantial academic research indicating that over time raw Betas tend to regress to the market mean of 1.00.[25]

Q. 56 Please explain why you relied on a twelve-month estimate of the proxy group mean adjusted Beta.

A. 56 As noted earlier, Beta estimates reported by Value Line and Bloomberg calculate the Beta for each company over historical periods of 60 and 24 months, respectively. During the recent financial market dislocation, the relationship between the returns of the proxy group companies and the S&P 500 was considerably different than has been experienced in the current market environment. In order to develop a cost of equity estimate that does not reflect an anomalous historical period, it is reasonable to rely on a near-term calculation of Beta to reflect the current relationship between the proxy group companies and the S&P 500. Given that Bloomberg uses a two-year calculation period, I based my analysis on a twelve-month calculation period.

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24 It is worthwhile noting that averaging nine individual Betas for each of the proxy group companies would produce the same result as first averaging the nine covariances and then dividing by the variance of the S&P 500's weekly returns.

22 The regression tendency of betas to converge to 1.0 over time is well known and widely discussed in financial literature. *See* Blume, Marshall E., *On the Assessment of Risk*, The Journal of Finance, Vol. 26, No. 1, March 1971, at 1-10.

Chart 4: Hevert Proxy Group Rolling Twelve-Month Beta Coefficient Components

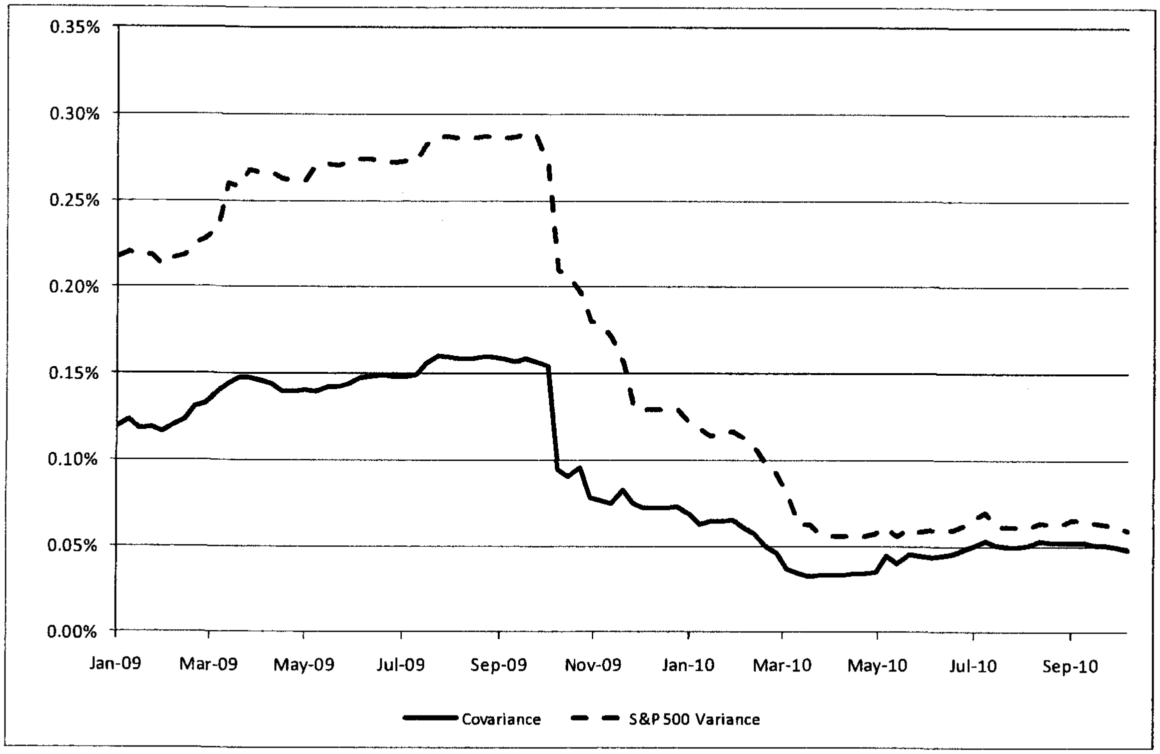


Chart 4 demonstrates that since January 2009, the difference between the average covariance for the proxy group weekly returns and the variance in the S&P 500 weekly returns, calculated on a rolling twelve-month basis, has narrowed significantly. Since Beta is the ratio of the covariance to the variance, that increasingly small difference indicates that the proxy company stock prices have become increasingly volatile relative to the broad market. Consequently, over the past several months, the proxy group average Beta has been steadily increasing. That finding is consistent with the increased level of return correlation discussed earlier in my testimony.

Q. 57 Is your calculated Beta of 0.876 consistent with levels that were observed prior to the financial market crisis?

A. 57 Yes. In September 2007, one year prior to the Lehman Brothers bankruptcy filing, the average Beta for my proxy group companies, as reported by Value Line, was 0.839. In March 2008, the Beta for this same group was 0.883. Based on those historical measures, it is my view that the twelve-month average calculated Beta of 0.876 is reasonable when compared to levels before the financial market crisis.

Q. 58 How did you apply your modified CAPM?

A. 58 I relied on the *ex-ante* risk premium and near-term Beta to calculate the CAPM model using both the current 30-day average yield on the 30-year Treasury bond and near-term projections of the 30-year Treasury bond yield as the risk-free rate. As noted in Exhibit No. ___(RBH-4), the use of a projected market risk premium and risk-free rates produces a range of results that is generally consistent with the range of results produced by the other calculation methodologies.

Q. 59 What are the results of your CAPM analyses?

A. 59 As shown in Table 5 (below), (*see* also Exhibit No. ___(RBH-4)), the results of my modified CAPM analysis, using the current Beta estimate suggest a mean ROE of 12.46 percent based on a range of returns from 11.99 percent to 12.93 percent. My CAPM analysis using the average historical Beta produces a range of returns from 10.06 percent to 10.88 percent.

Table 5: Forward-Looking CAPM Results

	Current 30-Year Treasury (3.75%)	Near Term Projected 30-Year Treasury (4.22%)
Current Calculated Beta		
Sharpe Ratio Derived Market Risk Premium	12.45%	12.93%
Ex-Ante Approach Derived Market Risk Premium	11.99%	12.47%
Average Historical Beta		
Sharpe Ratio Derived Market Risk Premium	10.41%	10.88%
Ex-Ante Approach Derived Market Risk Premium	10.06%	10.53%

Q. 60 How did you incorporate these CAPM estimates in your ROE recommendation?

A. 60 As noted earlier in my testimony, the equity markets continue to experience elevated levels of expected volatility and instability. Those conditions, which are directly reflected in the Beta Risk Premium and Risk Free rate terms of the model indicate that the cost of equity is considerably higher than the levels suggested by other approaches, in particular, the Constant Growth DCF model. While I realize that some of the market conditions that influence the CAPM results, such as the elevated degree of return correlations, are symptomatic of the currently unsettled market conditions and as such, they may revert to more "normal" levels over the long term. Nonetheless, it would be inappropriate not to recognize the effect of those conditions on the Company's cost of equity. Consequently, I have considered several of the CAPM results in arriving at my ROE recommendation.

G. Bond Yield Plus Risk Premium Analysis

Q. 61 Please describe the bond yield plus risk premium approach you employed.

A. 61 In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with ownership and therefore require a premium over the return they would have earned as a bondholder. That is, since returns to equity holders are more risky than returns to bondholders, equity investors must be compensated for bearing that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. As noted in my discussion of the CAPM, since the equity risk premium is not directly observable, it typically is estimated using a variety of approaches, some of which incorporate *ex-ante*, or forward-looking estimates of the cost of equity, and others that consider historical, or *ex-post,* estimates. In the case of the CAPM, those estimates are with respect to the return on the broad market. An alternative approach is to use actual authorized returns for natural gas utilities as the measure of the cost of equity to determine the Equity Risk Premium.

Q. 62 What did your bond yield plus risk premium analysis reveal?

A. 62 As shown on Exhibit No. ___(RBH-6), from 1992 through October 8, 2010, there was, in fact, a significant statistical relationship between risk premia and interest rates. To estimate that relationship, I examined the relationship between risk premia and interest rates using the following equation:

$$RP = a + b\,(T) \quad [6]$$

where:

RP = Risk Premium (difference between allowed ROEs and the 30-Year Treasury Yield);

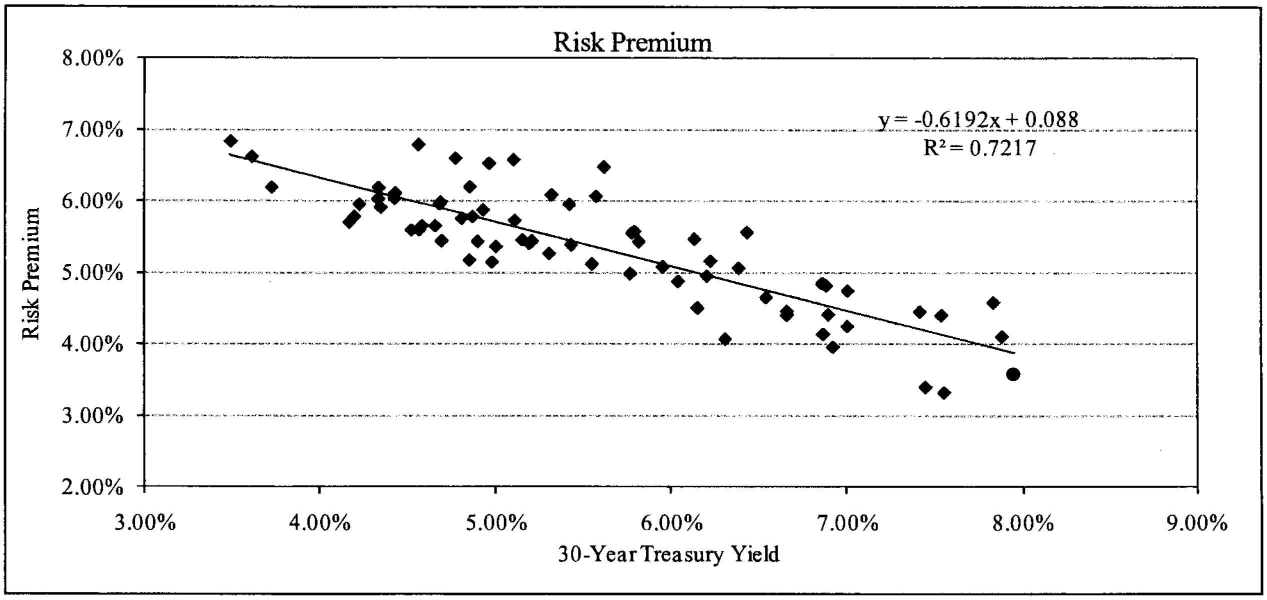
a = Intercept term;

b = Slope term; and

T = 30-Year Treasury Yield.

Data regarding allowed ROEs was derived from 394 natural gas distribution rate cases from 1992 through October 8, 2010 as reported by Regulatory Research Associates. As shown in Chart 5 (below), the R-squared of the equation assuming a linear relationship is approximately 0.72. This value means that the equation explains approximately 72.00 percent of the deviation from the regression line. Based upon the equation shown in Chart 5 (below), and current and near-term projected yields on 30-year U.S. Treasury bonds, the ROE ranges between 10.23 percent and 11.01 percent.[26]

Chart 5: Risk Premium Results



[26] In order to ensure that the regression coefficients were not biased as a result of serially correlated error terms, the equation presented in Exhibit No. ___(RBH-6) was estimated using the Prais-Winsten corrective routine. That equation continues to produce a negative slope coefficient and an average ROE estimate of approximately 10.61 percent.

VII. REGULATORY AND FINANCIAL RISKS

Q. 63 Do the mean DCF, CAPM, and Risk Premium results for the proxy group provide an appropriate estimate of the cost of equity for Southwest Gas?

A. 63 No, the mean results do not necessarily provide an appropriate estimate of the Company's cost of equity. In my view, there are several additional factors that must be taken into consideration when determining where the Company's cost of equity falls within the range of results. Regulatory risks include regulatory lag; and rate design. Financial risks include the Company's credit rating relative to the proxy group; and flotation costs. These risk factors, which are discussed below, should be considered with respect to their overall effect on the Company's risk profile.

A. Regulatory Risks

Q. 64 Is there any precedent that identifies the regulatory risks faced by utilities?

A. 64 Yes. In *Hope*, the Supreme Court noted that it is not the theory, but the impact of the rate order which counts.[27] In *Duquesne,* the Supreme Court noted the risks to utilities of ratemaking treatment and the importance of establishing ratemaking treatment that does not continuously favor customers to the continuous detriment of investors:

> [t]he risks a utility faces are in large part defined by the rate methodology because utilities are virtually always public monopolies dealing in essential service, and so relatively immune to the usual market risks. Consequently, a State's decision to arbitrarily switch back and forth between methodologies in a way which required investors to bear the risk of bad investments at some times while denying them the benefit of good investments at others would raise serious constitutional questions. [28]

Q. 65 How does the regulatory environment in which a utility operates affect its access to and cost of capital?

A. 65 The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory

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27 *Hope*, 320 U.S., at 602, 64 S.Ct., at 288.

28 *Duquesne*, 109 S.Ct. 609 (1989) at 9.

environment. As noted by Moody's, "the predictability and supportiveness of the regulatory framework in which a regulated utility operates is a key credit consideration and the one that differentiates the industry from most other corporate sectors."[29] Moody's further noted that:

> For a regulated utility company, we consider the characteristics of the regulatory environment in which it operates. These include how developed the regulatory framework is; its track record for predictability and stability in terms of decision making; and the strength of the regulator's authority over utility regulatory issues. A utility operating in a stable, reliable, and highly predictable regulatory environment will be scored higher on this factor than a utility operating in a regulatory environment that exhibits a high degree of uncertainty or unpredictability. Those utilities operating in a less developed regulatory framework or one that is characterized by a high degree of political intervention in the regulatory process will receive the lowest scores on this factor.[30]

S&P notes that regulatory commissions should eliminate, or at least greatly reduce, the issue of rate-case lag.[31] Moody's agrees that timely cost recovery is an important determinant of credit quality, stating that "[t]he ability to recover prudently incurred costs in a timely manner is perhaps the single most important credit consideration for regulated utilities, as the lack of timely recovery of such costs has caused financial stress for utilities on several occasions"[32] Similarly, FitchRatings ("Fitch") notes that in the current environment of rising costs, utilities will require more frequent rate increases to maintain financial results, resulting in further exposure to regulatory risks.[33]

Q. 66 Have you compared the risk of regulatory lag in Arizona to the regulatory lag for the proxy group companies?

A. 66 Yes. I reviewed the regulatory lag for Southwest Gas in Arizona in the Company's last three cases[34] and compared that lag with the regulatory lag experienced by the operating companies of my proxy group companies over the same period. In this

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29 Moody's Global Infrastructure Finance, *Regulated Electric and Gas Utilities*, August 2009, at 6.

30 *Ibid.*

31 Standard and Poor's, *Assessing Vertically Integrated Utilities' Business Risk Drivers*, U.S. Utilities and Power Commentary, November 2006, at 10.

32 Moody's, Global Infrastructure Finance, *Regulated Electric and Gas Utilities*, August 2009, at 7.

33 FitchRatings, *U.S. Utilities, Power, and Gas 2010 Outlook*, December 4, 2009, at 1.

34 This analysis was conducted based on data compiled by Regulatory Research Associates ("RRA").

analysis, I analyzed the duration of 50 rate proceedings filed by the operating companies of my proxy group companies across 15 regulatory jurisdictions. As shown in Exhibit No. ___(RBH-7), in Arizona, the average number of months between the date of filing and the date of the Commission's order in the Company's last three rate cases was 16 months. The average duration of the regulatory processes for the operating companies of the proxy group companies was half that time, or approximately 8 months. Therefore, in Arizona, Southwest Gas faces substantially greater risk related to regulatory lag than the proxy group companies.

Q. 67 Are there other regulatory risks that should be considered?

A. 67 Yes. It also is important to recognize that regulatory decisions regarding the authorized ROE and capital structure have direct consequences for the subject utility's internal cash flow generation (sometimes referred to as "Funds Flow from Operations", or "FFO"). Since credit ratings are intended to reflect a company's ability to fund financial obligations, the ability to internally generate the cash flows required to meet those obligations (and to provide an additional amount for unexpected events) is of critical importance to debt investors. Two of the most important metrics used to assess that ability are the ratios of FFO to debt, and FFO to interest expense, both of which are directly affected by regulatory decisions regarding the appropriate rate of return and capital structure.

Q. 68 Please explain how credit rating agencies consider regulatory risk in establishing a company's credit rating.

A. 68 While both S&P and Moody's consider regulatory risk in establishing credit ratings, Moody's has published a report quantifying the importance of this metric. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity, and key financial metrics. Of these criteria, regulatory framework and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[35] In fact, Moody's notes that the ability to recover prudently incurred costs in a timely manner

[35] Moody's Investors Service, *Rating Methodology: Regulated Electric and Gas Utilities*, August 2009, at 4.

is perhaps the single most important credit consideration for regulated utilities as the lack of timely recovery of such costs has caused financial stress for utilities on several occasions.[36]

Q. 69 Have credit rating agencies specifically identified the regulatory environment as a risk for Southwest Gas?

A. 69 Yes. Moody's and Standard and Poor's both emphasize their concerns regarding the regulatory environment in Arizona. In a recent report, Standard and Poor's ("S&P") considered each of the three regulatory jurisdictions in which Southwest operates. In that report, S&P noted that California and Nevada were supportive regulatory environments and Arizona, while improving, is still considered a challenging regulatory environment. S&P stated that Arizona was less supportive of credit than other jurisdictions because the Company does not have rate design mechanisms that help mitigate the affect of weather and rate design, ultimately throughput, on the Company's cash flow. S&P further noted that the approval of a decoupling mechanism is "critical to the improvement in Arizona's overall regulatory environment, and to protect the company from under recoveries during warmer weather."[37] Importantly, Standard and Poor's noted that the positive outlook could be revised to stable if regulatory risks increased in Arizona, or the company experiences significant reductions in customer usage without regulatory protections.[38]

While Moody's recently upgraded the Company's senior unsecured rating to Baa2 from Baa3, in its detailed rating considerations Moody's noted the below average level of regulatory supportiveness in Arizona. In particular, Moody's noted significant regulatory lag and the lack of rate design mechanisms to include weather normalization and decoupling as the main concerns.[39]

Q. 70 What are your conclusions regarding regulatory guidelines and capital market expectations?

A. 70 The regulatory environment is one of the most important issues considered by both debt and equity investors in assessing the risks and prospects of utility companies.

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36 *Ibid.*, at 7.

37 Standard & Poor's, *Ratings Direct on the Global Credit Portal*, April 22, 2010, at 2.

38 *Ibid.*, at 4.

39 Moody's Investor Service, *Credit Opinion: Southwest Gas Corporation*, May 27, 2010.

From the perspective of debt investors, the authorized return should enable the Company to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its system, and maintain sufficient levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the Company's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions. From the perspective of equity investors, the authorized return must be adequate to provide a risk-comparable return on the equity portion of the Company's capital investments. Because equity investors are the residual claimants on the Company's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with regulatory uncertainty and its effect on future cash flows.

As noted earlier, both Moody's and S&P have identified the regulatory environment in Arizona as a particular risk, and have noted the credit considerations attendant to that risk. In my view, therefore, the regulatory environment is a meaningful area of risk for Southwest Gas.

B. Credit Rating

Q. 71 Why are credit ratings an important indicator as to the appropriate cost of capital?

A. 71 Credit ratings represent an independent assessment of a utility company's ability to meet its financial obligations. Credit ratings also are an important determining factor in the interest rate that a utility company will pay for debt financing. Likewise, credit ratings are also considered by equity investors as they determine their required rate of return.

Q. 72 How does Southwest Gas's credit rating compare to the proxy group companies?

A. 72 As noted earlier, Southwest Gas has Long-Term Issuer credit ratings of BBB, BBB, and Baa2 from S&P, Fitch and Moody's, respectively. Seven of the nine proxy companies have an S&P rating of A- or higher, while the other two proxy companies have ratings of BBB+. On average, the proxy group has an S&P ranking of A, which is three notches higher than Southwest Gas on the S&P ranking scale.

Q. 73 Have you quantified the impact of differences in credit ratings on the interest rate paid by regulated utility companies?

A. 73 Yes. I have examined the credit spread between the average yield for the 30-year U.S. Treasury and the yield on the Moody's A-rated Utility Bond Index and the Baa-rated Utility Bond Index for the past six months. As shown in Table 6 (below), this analysis demonstrates that the average credit spread for Baa-rated utility bonds has been 58 basis points higher than the average credit spread rate for A-rated utility bonds during this period.

Table 6: Credit Spreads on A and Baa-rated Utility Bond Indices[40]

	A-rated utility bond	Baa-rated utility bond
October 2010	1.24%	1.76%
September 2010	1.23%	1.76%
August 2010	1.21%	1.75%
July 2010	1.26%	1.98%
June 2010	1.34%	2.06%
May 2010	1.22%	1.69%
Average Spread	1.25%	1.83%

Q. 74 What is your conclusion regarding the effect of Southwest Gas's credit rating on its ROE?

A. 74 Southwest Gas's credit rating is lower than the average for the proxy group companies. The Commission's order in this proceeding, therefore, could directly affect the ability of the Company to maintain [or enhance] its credit profile relative to its peers.

40 Credit spreads measured against 30-year Treasury Bond yields.

C. Flotation Costs

Q. 75 What are flotation costs?

A. 75 Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for the preparation, filing, underwriting, and other costs of issuance of common stock.

Q. 76 Why is it important to recognize flotation costs in the allowed return on equity?

A. 76 In order to attract and retain new investors, a regulated utility must have the opportunity to earn a return that is both competitive and compensatory. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diminishing its ability to attract adequate capital on reasonable terms.

Q. 77 Over what periods of time are issuance and flotation costs recognized?

A. 77 The issuance costs associated with long-term debt reflect the incurrence of issuance costs that can be assigned a definite life or period of applicability. These costs are amortized over the life of the debt issuance, either to maturity or upon retirement of the debt. Equity issuance or flotation costs, however, do not have a definite period of applicability, but rather have an infinite life.

Q. 78 Do the DCF and CAPM models already incorporate investor expectations of a return that compensates for flotation costs?

A. 78 No. All the models used to estimate the appropriate ROE assume no "friction" or transaction costs, as these costs are not reflected in the market price (in the case of the DCF model) or risk premium (in the case of the CAPM). However, "br + sv" form of the Retention Growth estimate used in my DCF analysis is meant to reflect growth from both internally generated funds (*i.e.*, the "br" term) and from issuances of equity (*i.e.*, the "sv" term). Therefore, the retention growth estimate implicitly assumes that there will be future issuances of equity, which would not be expected to be issued at a zero cost.

Q. 79 Have you made a specific adjustment to the Company's ROE to recover flotation costs?

A. 79 No. While I recognize that flotation costs are an important component of the cost of capital, it is my understanding that as a matter of policy the Commission does not consider the recovery of flotation costs.[41] Furthermore, as noted by Company witness Theodore Wood in the Company's last rate proceeding, the Company has issued a substantial amount of equity through existing equity plans (Dividend Reinvestment and Stock Purchase Plan, Employee Investment Plan, Management Incentive Plan, and Stock Incentive Plan), the Company's equity shelf program ("ESP"), and an increase in retained earnings.[42] In that case, Mr. Wood noted that shares issued through the ESP were issued at an administrative cost of just 1.00 percent.[43] Therefore I have not made a specific adjustment to the ROE to recover any costs related to equity issuances. Rather, I have considered flotation costs in determining where within the range of reasonable returns Southwest Gas's ROE should fall.

VIII. <u>DECOUPLING</u>

Q. 80 Please summarize the Company's proposed decoupling mechanism.

A. 80 As discussed in more detail in the Direct Testimony of Company witness Edward Gieseking, the Company is proposing to establish a revenue stabilizing mechanism referred to by the Company as the Energy Efficiency Enabling Provision ("EEP") that accounts for over and under-recoveries of the authorized revenue requirement, and will balance the actual recovery to the authorized revenue requirement [on a monthly basis (for weather) and on a quarterly basis (for non-weather)]. As discussed by Mr. Gieseking, this mechanism is being proposed to mitigate the additional risks associated with declining use per customer that result from the implementation of the Energy Efficiency Standards established by the Commission. Under the Energy Efficiency Standards, the Company is required, through the implementation of energy efficiency and renewable energy resource technologies, to achieve increasing annual energy savings each year beginning in 2011. While the annual energy savings in 2011 are required to be 0.50 percent, the annual savings are required to increase to at

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41 Arizona Corporation Commission, Docket No. E-01345A-05-08816, Decision No. 69663, June 28, 2007, at 49.

42 Southwest Gas Corporation Docket No. G-01551A-07-0504, Prepared Direct Testimony of Theodore K. Wood, at 7.

43 Southwest Gas Corporation Docket No. G-01551A-07-0504, Prepared Direct Testimony of Theodore K. Wood, Exhibit No.___(TKW-1), at 7.

least 6.00 percent of the Company's retail gas energy sales, in therms, for the calendar year 2019, by 2020. [44]

The proposed EEP is a symmetrical mechanism, meaning that while the Company would be assured revenue to offset declines due to weather or other exogenous risks, it also provides the potential for rate reductions if actual revenues per customer exceed authorized revenues.

Q. 81 If the Commission were to adopt the Company's proposed EEP, what is the appropriate standard to consider in establishing the Company's ROE?

A. 81 Under the comparable earnings standard, the allowed ROE should represent a return commensurate with the returns on investments of similar risks. In this case, the proxy group companies would constitute the comparable earnings standard for Southwest Gas. While the Company may be less risky from a revenue stability perspective, acceptance by the Commission of the EEP would not make the Company less risky than the proxy group companies to the extent that those companies have employed some method to address revenue shortfalls. In other words, the issue is not whether the Company's revenues would be less volatile with the proposed EEP than without it; rather the relevant issue is whether the Company would be more or less risky with its EEP as compared to the proxy group. Exhibit No. ___(RBH-8) provides a summary of the methods used by the proxy group companies to address revenue stability. As shown in that exhibit, the issue of revenue stability has been addressed by each of the proxy group companies through the implementation of various revenue stabilization adjustment mechanisms and favorable rate structures.

Q. 82 How do rating agencies view the implementation of revenue stabilization mechanisms?

A. 82 Revenue stabilization mechanisms have become increasingly important rate design mechanisms and have been implemented nationwide. As such, rating agencies have come to expect some form of revenue stabilization mechanism. In fact, four years ago, in a 2006 review of the natural gas local distribution companies, Moody's noted an increased focus on the use of revenue stabilization mechanisms:

[44] Arizona Corporation Commission Decision No. 71855, August 25, 2010, at 5-6.

> While [revenue decoupling] may have originally begun as a regional concept in certain jurisdictions, it has quickly become a nationwide phenomenon that will challenge regulators and gas utilities alike, as they seek to correct a structural imbalance in their rate design that has become increasingly difficult to ignore.[45]

In a June 2006, Special Report on Revenue Decoupling and Local Gas Distribution Companies, Moody's clearly noted the effect of decoupling mechanisms on credit rating outlooks:

> LDCs that have, or soon expect to have, RD [Revenue Decoupling] stand a better chance than others in being able to maintain their credit ratings or stabilize their credit outlook in face of adversity. This difference between those companies that have RD and those that do not will tend to be further accentuated as the credit demarcation reflected through rating actions becomes more evident.[46]

To the extent the Company will be refinancing several hundred million dollars of long-term debt over the next few years, the implementation of the EEP in this proceeding may have a material effect on the debt costs to be paid by the Company's customers incrementally for many years to come. As noted earlier, both Moody's and S&P specifically identified the lack of such a mechanism to mitigate the financial risks of declining use per customer and weather normalization as a concern for Southwest Gas' Arizona jurisdiction. In particular, both rating agencies have noted that the absence of such a mechanism could have negative implications for the Company's credit rating in the future. It is apparent, therefore, that rating agencies view revenue stabilization mechanisms as a means of maintaining the status quo in today's volatile utility environment. Therefore, the absence of some form of revenue stabilization mechanism results in an increase in the regulatory risk for Southwest Gas in its Arizona jurisdiction.

Q. 83 What do you conclude about Southwest's relative risk to the proxy group if the Company's EEP is approved?

A. 83 Implementation of the proposed EEP would not make Southwest Gas less risky than the proxy group companies, but rather would make the Company more comparable to

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45 *Local Gas Distribution Companies: Update on Revenue Decoupling and Implications for Credit Ratings*, Moody's, June 2006, at 6. [Clarification added.]

46 *Ibid.*

the proxy group in that the proposed EEP provides for the reconciliation of actual revenue to authorized revenue, which provides similar revenue stability to the structures that have been implemented by the proxy group companies.

Q. 84 Is it your position that the implementation of the Company's proposed EEP should have no effect on the Company's ROE?

A. 84 Yes. As noted previously, the Company's proposed EEP, is designed to eliminate disincentives to achieving the Commission's Energy Efficiency Standards. As noted earlier, a comparison of the proxy group rate structures and the Company's proposed decoupling mechanism demonstrates that the proposed decoupling mechanism is similar to the mechanisms that have been implemented by proxy group companies, in that they are designed to address revenue deficiencies that result from weather normalization, declining throughput, and other throughput related risks. Moreover, there is no conclusive evidence of which I am aware indicating that companies that have implemented such structures either have lower required ROEs or have significantly different market valuations. Based on the comparability of the company's proposed decoupling mechanism to the rate structures implemented by the proxy group companies, and the market's valuation of companies with decoupling mechanisms, I conclude that approval of the Company's decoupling mechanism should have no effect on the Company's ROE.

Q. 85 What would be the effect on your recommended ROE if the Company was not proposing a decoupling mechanism?

A. 85 As a preliminary matter, it is important to recall that the estimation of the cost of equity is a comparative analysis. It also is important to keep in mind that for several years, rating agencies (Moody's in particular) have identified decoupling structures as an increasingly common ratemaking mechanism. Moreover, all of the proxy companies have implemented rate structures designed to stabilize revenues. Absent such a structure, Southwest Gas would be susceptible to incrementally greater risks than its peers. Consequently, while the Commission's acceptance of the Company's proposed decoupling structure would not result in a reduced cost of equity, the denial of such a structure would render the Company more risky, resulting in a cost of equity toward the upper end of the range. Indeed, as previously noted, approval of the proposed EEP by the Commission in this proceeding will arguably make the Company more comparable to the proxy group companies.

Q. 86 Is your recommended ROE for Southwest Gas lower than it otherwise would be absent the Company's proposal to implement a revenue decoupling mechanism?

A. 86 Yes.

IX. CONCLUSIONS AND RECOMMENDATION FOR THE ORIGINAL COST RATE BASE ROE

Q. 87 What is your conclusion regarding a fair ROE for Southwest Gas?

A. 87 Based on the various quantitative and qualitative analyses presented in my Direct Testimony, I believe that a reasonable range of results for Southwest Gas is from approximately 10.50 percent to 11.25 percent. The lower end of that range is supported by the range of the Multi-Stage DCF analyses and the upper end is supported by the CAPM analyses.

In light of the regulatory and business risks of Southwest Gas compared to the proxy group, it is my view that an ROE of 11.00 percent is reasonable, if not somewhat conservative. This 11.00 percent ROE is slightly above the mean of my range of results. In my view, that ROE should reasonably balance the interests of customers and shareholders by enabling the Company to maintain its financial integrity and therefore its ability to attract capital at reasonable rates under a variety of different economic and financial market conditions.

Table 7: Summary of Analytical Results

	Mean Low	**Mean**	**Mean High**
Constant Growth DCF			
30-Day Average	7.43%	8.39%	9.55%
90-Day Average	7.54%	8.50%	9.65%
180-Day Average	7.59%	8.55%	9.71%
	Long-term P/E Model	**Mean**	**Gordon Model**
Multi-Stage DCF			
30-Day Average	10.08%	10.28%	10.48%
90-Day Average	10.36%	10.48%	10.60%
180-Day Average	10.49%	10.58%	10.66%
Supporting Methodologies			
		Current 30-Year Treasury (3.75%)	**Near-Term Projected 30-Year Treasury (4.22%)**
CAPM- Current Calculated Beta			
Sharpe Ratio Derived Market Risk Premium		12.40%	12.87%
Market DCF Derived Market Risk Premium		11.94%	12.42%
CAPM – Average Historical Beta			
Sharpe Ratio Derived Market Risk Premium		10.41%	10.88%
Market DCF Derived Market Risk Premium		10.06%	10.53%
Treasury Yield Plus Risk Premium			
	Mean Low	**Mean**	**Mean High**
Risk Premium	10.23%	10.55%	11.01%

X. <u>FAIR VALUE RATE BASE</u>

Q. 88 What is the fair value standard in Arizona?

A. 88 As noted in *Chapparal,*[47] the Arizona Constitution requires the use of a fair value rate base in establishing rates. Article 15 para. 14 of the Arizona Constitution states:

> The corporation commission shall, to aid it in the proper discharge of its duties, ascertain the fair value of the property within the state of every public service corporation doing

[47] *In the Matter of the Application of Chapparal City Water Company, an Arizona Corporation, for a Determination of the Current Fair Value of its Utility Plant and Property and for Increases in its Rates and Charges for Utility Service Based Thereon,* Docket No. W-02113A-04-0616, Arizona Corporation Commission Decision No. 70441, July 28, 2008, at 20-21.

> business therein; and every public service corporation doing business within the state shall furnish to the commission all evidence in its possession, and all assistance in its power, requested by the commission in aid of the determination of the value of the property within the state of such public service corporation.

As interpreted by the Arizona Court of Appeals, this paragraph requires the Commission to find the fair value of a public service corporation's property and to use that value to set just and reasonable rates.[48]

Q. 89 How did the Company establish the fair value rate base?

A. 89 As is discussed in the testimony of Company witness Robert Mashas the Company calculated the fair value rate base ("FVRB") as the simple average of the original cost rate base ("OCRB") and the reconstruction cost new less depreciation ("RCND") of the utility system. As shown in the direct testimony of Company witness Mashas, the Company's RCND is estimated to be $1,839,334,300. The OCRB of $1,073,700,633 is based on the Company's plant accounting records, as of June 30, 2010, (*see* Exhibit No. ___(RBH-9)). The resulting FVRB is $1,456,517,467.

Q. 90 Do you agree with the Company's estimate of the FVRB?

A. 90 I believe that the Company's proposed FVRB is a reasonable, if not conservative estimate of the current market value of the Company's gas distribution system assets.

Q. 91 What is the definition of "fair value" as used in your testimony?

A. 91 Used in this context, "fair value" is the price at which a property would change hands between a willing buyer and a willing seller, when neither party is under any compulsion to enter into a transaction, and both parties have reasonable knowledge of relevant facts.[49] That definition is consistent with the Internal Revenue Code and Revenue Ruling 59-60 ("Ruling 59-60"), which notes that court decisions regarding Fair Value further assume that the buyer and seller are "able, as well as willing, to trade and to be well informed about the property and concerning the market for such property."[50]

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[48] *Ibid.*

[49] *See* Shannon P. Pratt, Valuing a Business, 5th Ed. McGraw Hill, 2008, at 41-42.

[50] IRS Revenue Ruling 59-60, 1959-1 CB 237-IRC Sec. 2031.

Q. 92 Please provide a brief description of the analytical approaches used to determine the reasonableness of the Company's estimate of the FVRB.

A. 92 There are three main approaches to valuation typically relied upon by investors and analysts: the Income Approach; the Cost Approach; and the Comparables Approach. The Income Approach is not appropriate in circumstances such as these where the value of the assets is used to determine the income of the assets. The RCND, which is discussed in the testimony of Company witness Mashas is the Company's estimate of the current value of the assets using the Cost Approach. In order to determine the reasonableness of the Company's estimate of the FVRB, I relied on the Comparables Approach, specifically transaction comparables.

Q. 93 Please explain how you applied the Transaction Comparables Methodology to determine the reasonableness of the Company's FVRB.

A. 93 I compared the Company's FVRB estimate to the market value of comparable companies in recent arms-length transactions. In order to create a consistent basis of comparison, I normalized the transaction values based on the net plant of the acquired company. I then compared this transaction multiple to a comparable multiple for the Company; the ratio of FVRB to OCRB.

Q. 94 How did you establish the universe of transactions that were analyzed for comparability to the Southwest Gas system?

A. 94 I began by developing a database of announced and executed transactions involving the sale of predominantly natural gas distribution utility companies and assets. That data was compiled using SNL Financial's utility merger screening tool. I also reviewed publicly available information such as press releases, investor presentations, SEC filings, and regulatory commission filings. Once that preliminary list of transactions was developed, I then applied certain screening criteria to establish a final group of transactions from which I calculated the ratio of transaction value to net plant.

Q. 95 What period of time did you consider in developing your list of comparable transactions?

A. 95 I limited my analysis to transactions that were announced within the past five years (*i.e.*, from January 1, 2005 through September 30, 2010). In my view, that period is sufficiently long to avoid the bias that could result from limiting the analysis to a shorter period, yet produces a reasonably large number of observations.

Q. 96 How many transactions were included in your preliminary list of comparable transactions?

A. 96 My preliminary list included 25 transactions. I then applied the following screening criteria:

1. I eliminated transactions involving companies or assets that were not primarily natural gas distribution utilities;
2. I eliminated transactions in which the acquired enterprise had a substantial portion of its operations subject to Federal jurisdiction (*i.e.*, the Federal Energy Regulatory Commission, or "FERC"); and
3. I eliminated transactions for which the terms of the transaction were not disclosed, or were not disclosed to sufficient detail to produce a reasonable analysis of that particular transaction's valuation multiples.

Q. 97 How many transactions met your screening criteria?

A. 97 Of the 25 transactions initially reviewed, 14 transactions (*see* Table 8, below) met my screening criteria.

Table 8: Comparable Transactions

Announcement Date	Closing Date	Buyer	Acquired
Jul-08	Feb-10	Babcock & Brown	Dominion Peoples Natural Gas
Jul-08	Oct-08	MDU Resources	Intermountain Gas Company
Mar-08	Oct-08	UGI Corporation	PPL Gas Utilities Corp
Jan-08	Jan-09	Continental Energy	Public Service of New Mexico Gas Co.
Nov-07	Jul-08	SourceGas LLC	Arkansas Western Gas Company
Feb-07	Nov-07	Cap Rock Holding Corp	SEMCO Energy
Jan-07	Sep-07	Energy West, Inc	Frontier Utilities
Jul-06	Jul-07	MDU Resources	Cascade Natural Gas
Feb-06	Aug-06	National Grid Plc	New England Gas - Rhode Island Ops
Jan-06	Aug-06	UGI Corporation	PG Energy
Sep-05	Jun-06	Empire District	Aquila Missouri Operations
Sep-05	Jul-06	WPS Resources	Aquila Minnesota Natural Gas Ops
Sep-05	Apr-06	WPS Resources	Aquila Michigan Natural Gas Ops
May-10	Pending	UIL Holdings Corp.	Berkshire Gas, CT Natural Gas, Southern CT Gas

Q. 98 Please summarize the valuation multiples that resulted from the Comparables Transaction analysis.

A. 98 Table 9 (below) summarizes the transaction value to net plant multiple for each of the comparable transactions. As shown in Table 9, and in Exhibit No. ___(RBH-10), the range of multiples is from 0.1 times to 6.5 times net plant.

Table 9: Comparable Transaction Multiples

Acquired Company	Net Plant Multiple
Berkshire Gas, CT Natural Gas, Southern CT Gas	1.1
Dominion Peoples Natural Gas	1.4
Intermountain Gas Company	1.7
PPL Gas Utilities Corp	1.2
Public Service Co. of New Mexico Gas Ops.	1.4
Arkansas Western Gas Co.	1.7
SEMCO Energy	1.4
Frontier Utilities	0.1
Cascade Natural Gas	1.4
New England Gas - Rhode Island Ops	0.8
PG Energy	1.1
Aquila Missouri Operations	1.8
Aquila Minnesota Natural Gas Ops	6.5
Aquila Michigan Natural Gas Ops	1.6
High	6.5
Mean	1.7
Median	1.4
Low	0.1

Q. 99 What is the most appropriate measure of central tendency to rely on from your comparables analysis?

A. 99 Based on the range of results presented in Table 9, I believe that the most appropriate measure of central tendency is the median result. The use of the median eliminates any unusually high or low values from the estimate that would otherwise influence the final result if we were to rely on other measures of central tendency such as the mean value.

Based on the results presented in Table 9 (above), I believe that a valuation multiple of 1.4 times net plant is a reasonable measure of the fair value of the assets. Applying this multiple to the Company's OCRB results in a FVRB of approximately $1.50 billion.

Q. 100 What do you conclude from this analysis?

A. 100 Based on the results of this analysis, I conclude that the Company's estimate of the FVRB is conservative as compared with the market valuation of similar companies.

XI. FAIR VALUE RATE OF RETURN

Q. 101 Does the fair value standard also require consideration of the fair return on the fair value of the Company's assets?

A. 101 Yes. As noted above, the Arizona Constitution requires that the Commission establish just and reasonable rates using the fair value of the Company's property. In establishing the revenue requirement, the Commission would also need to establish the appropriate ROE to apply to the equity component of the FVRB.

Q. 102 Have you calculated the fair value rate of return ("FVROR") on the FVRB?

A. 102 Yes. As shown on Exhibit No. ___(RBH-9), I estimate that FVROR to be 7.50 percent.

Q. 103 Please explain how you calculated the FVROR.

A. 103 As shown in Exhibit No. ___(RBH-9), and in Table 10 (below), I calculated the difference between the OCRB and the Company's proposed FVRB. That this difference represents the appreciation in the value of the assets based on the current market value of the OCRB, and has been commonly referred to as the "fair value increment."[51] I then weighted the OCRB using the Company's proposed capital structure weighting, which includes the debt and equity component of the OCRB, and the appreciation in the value of the assets which, when added to the OCRB, results in the FVRB.

Q. 104 How did you apply the equity and debt costs to derive the FVROR?

A. 104 As shown in Table 10, I applied the Company's actual cost of debt to the debt component of the OCRB and my recommended ROE to the equity component of the

[51] Arizona Corporation Commission, Decision No. 70665, at 32.

OCRB. Consistent with Commission's decision in Decision No. 70665,[52] I applied 50.00 percent of the risk free rate of return to the market appreciation of the FVRB.

Q. 105 How did you estimate the risk free rate of return?

A. 105 As shown in Exhibit No. ___(RBH-9), my estimate of the nominal risk free rate of return is the average of the short-term projected yield on 30-year Treasury bonds of 4.22 percent and the long-term projected yield on the 30-year Treasury bonds of 5.80 percent of as reported in the Blue Chip Financial Forecast. I then adjusted the nominal risk free rate of 5.01 percent by the rate of inflation, which I estimated to be 2.47 percent. The resulting real risk free rate is then 2.47 percent.[53]

Q. 106 How did you estimate the rate of inflation?

A. 106 I calculated the rate of inflation based on the average of two measures of inflation, the Blue Chip Financial Forecast estimate of the long term change in CPI for 2017 through 2020, which is 2.50 percent and the EIA Annual Energy Outlook estimate of the change in CPI for the period from 2010 through 2035, of 2.45 percent, resulting in an inflation rate of 2.47 percent.

Q. 107 What is the resulting FVROR using this approach?

A. 107 As shown in Table 10 (below), based on the calculation discussed previously, the FVROR that would be applied to the FVRB is 7.50 percent.

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[52] Arizona Corporation Commission Decision No. 70665, In the Matter of the Application of Southwest Gas Corporation for Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Southwest Gas Corporation Devoted to its Operations Throughout the State of Arizona, December 24, 2008 at 31. In that decision, the Commission determined that the Staff's approach of applying one-half of the risk free rate to the fair value increment was appropriate.

[53] The real risk free rate = ((1+ nominal Treasury rate)/(inflation rate+1))-1.

Table 10: Calculation of the Fair Value Rate of Return[54]

Capital	Amount	Percent	Cost Rate	Weighted Cost Rate
Long-Term Debt	$ 512,155,202	35.16%	8.34%	2.93%
Common Equity	$ 561,545,431	38.55%	11.00%	4.24%
Capital Financing OCRB	1,073,700,633	73.72%		7.17%
Appreciation above OCRB not recognized on utility's books	382,816,834	26.28%	1.24%	0.32%
Total	$ 1,456,517,467	100.00%		7.50%

Q. 108 Do you believe that the FVROR is a reasonable estimate of the Company's cost of capital?

A. 108 A FVROR of 7.50 percent is a conservative estimate of the appropriate cost of capital for Southwest Gas. As discussed above, using the 50/50 weighting of the OCRB and the RCND results in a FVRB that is below the median valuation of similar companies, based on current market data. In addition, the application of only 50.00 percent of the risk free rate to the appreciation in the value of the assets is a conservative estimate of the return that would be required from the market. The effect of these two below market estimates results in a FVROR that is somewhat conservative.

Q. 109 Does this conclude your pre-filed Direct Testimony?

A. 109 Yes.

54 Consistent with the methodology that the Arizona Corporation Commission determined was appropriate in Decision No. 70665, at 31.

Robert B. Hevert, CFA
President

Mr. Hevert is an economic and financial consultant with broad experience in the energy industry. He has an extensive background in the areas of corporate strategic planning, energy market assessment, corporate finance, mergers, and acquisitions, asset-based transactions, asset and business unit valuation, market entry strategies, strategic alliances, project development, feasibility and due diligence analyses. Mr. Hevert has significant management experience with both operating and professional services companies.

REPRESENTATIVE PROJECT EXPERIENCE

Financial and Economic Advisory Services

Retained by numerous leading energy companies and financial institutions throughout North America to provide services relating to the strategic evaluation, acquisition, sale or development of a variety of regulated and non-regulated enterprises. Specific services have included: developing strategic and financial analyses and managing multi-faceted due diligence reviews of proposed corporate M&A counter-parties; developing, screening and recommending potential M&A transactions and facilitating discussions between senior utility executives regarding transaction strategy and structure; performing valuation analyses and financial due diligence reviews of electric generation projects, retail marketing companies, and wholesale trading entities in support of significant M&A transactions.

Specific divestiture-related services have included advising both buy and sell-side clients in transactions for physical and contractual electric generation resources. Sell-side services have included: development and implementation of key aspects of asset divestiture programs such as marketing, offering memorandum development, development of transaction terms and conditions, bid process management, bid evaluation, negations, and regulatory approval process. Buy-side services have included comprehensive asset screening, selection, valuation and due diligence reviews. Both buy and sell-side services have included the use of sophisticated asset valuation techniques, and the development and delivery of fairness opinions.

Specific corporate finance experience while a Vice President with Bay State Gas included: negotiation, placement and closing of both private and public long-term debt, preferred and common equity; structured and project financing; corporate cash management; financial analysis, planning and forecasting; and various aspects of investor relations.

Representative non-confidential clients have included:

- Conectiv generation asset divestiture
- Eastern Utilities Associates (prior to acquisition by National Grid, PLC) generation asset divestiture
- Niagara Mohawk – sale of Niagara Mohawk Energy
- Potomac Electric Company generation asset divestiture

Representative confidential engagements have included:

- Buy-side valuation and assessment of merchant generation assets in Midwestern U.S.
- Buy-side due diligence and valuation of wholesale energy marketing companies in Eastern and Midwestern U.S.
- Buy-side due diligence of natural gas distribution assets in Northeastern U.S.
- Financial feasibility study of natural gas pipeline in upper Midwestern U.S.

- Financial valuation of natural gas pipeline in Southwestern U.S.

Regulatory Analysis and Ratemaking

On behalf of electric, natural gas and combination utilities throughout North America, provided services relating to energy industry restructuring including merchant function exit, residual energy supply obligations, and stranded cost assessment and recovery. Also performed rate of return and cost of service analyses for municipally owned gas and electric utilities. Specific services provided include: performing strategic review and development of merchant function exit strategies including analysis of provider of last resort obligations in both electric and gas markets; and developing value optimizing strategies for physical generation assets.

Representative engagements have included:

- Performing rate of return analyses for use in cost of service analyses on behalf of municipally owned gas and electric utilities in the Southeastern and Midwestern U.S.
- Developing merchant function exit strategies for Northeastern U.S. natural gas distribution companies
- Developing regulatory and ratemaking strategy for mergers including several Northeastern natural gas distribution companies

Litigation Support and Expert Testimony

Provided expert testimony and support of litigation in various regulatory proceedings on a variety of energy and economic issues including the proposed transfer of power purchase agreements, procurement of residual service electric supply, the legal separation of generation assets, and specific financing transactions. Services provided also included collaborating with counsel, business and technical staff to develop litigation strategies, preparing and reviewing discovery and briefing materials, preparing presentation materials and participating in technical sessions with regulators and intervenors.

Energy Market Assessment

Retained by numerous leading energy companies and financial institutions nationwide to manage or provide assessments of regional energy markets throughout the U.S. and Canada. Such assessments have included development of electric and natural gas price forecasts, analysis of generation project entry and exit scenarios, assessment of natural gas and electric transmission infrastructure, market structure and regulatory situation analysis, and assessment of competitive position. Market assessment engagements typically have been used as integral elements of business unit or asset-specific strategic plans or valuation analyses.

Representative engagements have included:

- Managing assessments of the NYPOOL, NEPOOL and PJM markets for major North American energy companies considering entering or expanding their presence in those markets
- Assessment of ECAR, MAPP, MAIN and SPP markets for a large U.S. integrated utility considering acquisition of additional electric generation assets
- Assessment of natural gas pipeline and storage capacity in the SERC and FRCC markets for a major international energy company

Resource Procurement, Contracting and Analysis

Assisted various clients in evaluating alternatives for acquiring fuel and power supplies, including the development and negotiation of energy contracts and tolling agreements. Assignments also have included developing generation resource optimization strategies. Provided advice and analyses of transition service power supply contracts in the context of both physical and contractual generation resource divestiture transactions.

Business Strategy and Operations

Retained by numerous leading North American energy companies and financial institutions nationwide to provide services relating to the development of strategic plans and planning processes for both regulated and non-regulated enterprises. Specific services provided include: developing and implementing electric generation strategies and business process redesign initiatives; developing market entry strategies for retail and wholesale businesses including assessment of asset-based marketing and trading strategies; and facilitating executive level strategic planning retreats. As Vice President, Energy Ventures, of Bay State was responsible for the company's strategic planning and business development processes, played an integral role in developing the company's non-regulated marketing affiliate, EnergyUSA, and managed the company's non-regulated investments, partnerships and strategic alliances.

Representative engagements have included:

- Developing and facilitating executive level strategic planning retreats for Northeastern natural gas distribution companies
- Developing organization and business process redesign plans for municipally owned gas/electric/water utility in the Southeastern U.S.
- Reviewing and revising corporate merchant generation business plans for Canadian and U.S. integrated utilities
- Advising client personnel in development of business unit level strategic plans for various natural gas distribution companies

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PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2002 – Present)
President

Navigant Consulting, Inc. (1997 – 2001)
Managing Director (2000 – 2001)
Director (1998 – 2000)
Vice President, REED Consulting Group (1997 – 1998)

REED Consulting Group (1997)
Vice President

Bay State Gas Company (1987 – 1997)
Vice President, Energy Ventures and Assistant Treasurer

Boston College (1986 – 1987)
Financial Analyst

General Telephone Company of the South (1984 – 1986)
Revenue Requirements Analyst

EDUCATION

M.B.A., University of Massachusetts at Amherst, 1984
B.S., University of Delaware, 1982

DESIGNATIONS AND PROFESSIONAL AFFILIATIONS

Chartered Financial Analyst, 1991
Association for Investment Management and Research
Boston Security Analyst Society

PUBLICATIONS/PRESENTATIONS

Has made numerous presentations throughout the United States and Canada on several topics, including:

- Generation Asset Valuation and the Use of Real Options
- Retail and Wholesale Market Entry Strategies
- The Use Strategic Alliances in Restructured Energy Markets
- Gas Supply and Pipeline Infrastructure in the Northeast Energy Markets
- Nuclear Asset Valuation and the Divestiture Process

AVAILABLE UPON REQUEST

Extensive client and project listings, and specific references.

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Arkansas Public Service Commission				
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Arkansas Gas	01/07	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Arkansas Gas	Docket No. 06-161-U	Return on Equity
Colorado Public Utilities Commission				
Atmos Energy Corporation	07/09	Atmos Energy Colorado-Kansas Division	Docket No. 09AL-507G	Return on Equity (gas)
Xcel Energy	12/06	Public Service Company of Colorado	Docket No. 06S-656G	Return on Equity (gas)
Xcel Energy	04/06	Public Service Company of Colorado	Docket No. 06S-234EG	Return on Equity (electric)
Xcel Energy	08/05	Public Service Company of Colorado	Docket No. 05S-369ST	Return on Equity (steam)
Xcel Energy	05/05	Public Service Company of Colorado	Docket No. 05S-264G	Return on Equity (gas)
Connecticut Department of Public Utility Control				
Southern Connecticut Gas Company	09/08	Southern Connecticut Gas Company	Docket No. 08-08-17	Return on Equity
Southern Connecticut Gas Company	12/07	Southern Connecticut Gas Company	Docket No. 05-03-17PH02	Return on Equity
Connecticut Natural Gas Corporation	12/07	Connecticut Natural Gas Corporation	Docket No. 06-03-04PH02	Return on Equity
Federal Energy Regulatory Commission				
Portland Natural Gas Transmission System	05/10	Portland Natural Gas Transmission System	Docket No. RP10-729-000	Return on Equity
Florida Gas Transmission Company, LLC	10/09	Florida Gas Transmission Company, LLC	Docket No. RP10-21-000	Return on Equity
Maritimes and Northeast Pipeline, LLC	07/09	Maritimes and Northeast Pipeline, LLC	Docket No. RP09-809-000	Return on Equity
Spectra Energy	02/08	Saltville Gas Storage	Docket No. RP08-257-000	Return on Equity
Panhandle Energy Pipelines	08/07	Panhandle Energy Pipelines	Docket No. PL07-2-000	Response to draft policy statement regarding inclusion of MLPs in proxy groups for determination of gas pipeline ROEs
Southwest Gas Storage Company	08/07	Southwest Gas Storage Company	Docket No. RP07-541-000	Return on Equity
Southwest Gas Storage Company	06/07	Southwest Gas Storage Company	Docket No. RP07-34-000	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Sea Robin Pipeline LLC	06/07	Sea Robin Pipeline LLC	Docket No. RP07-513-000	Return on Equity
Transwestern Pipeline Company	09/06	Transwestern Pipeline Company	Docket No. RP06-614-000	Return on Equity
GPU International and Aquila	11/00	GPU International	Docket No. EC01-24-000	Market Power Study
Georgia Public Service Commission				
Atlanta Gas Light Company	05/10	Atlanta Gas Light Company	Docket No. 31647-U	Return on Equity
Massachusetts Department of Public Utilities				
National Grid	08/09	Massachusetts Electric Company d/b/a National Grid	DPU 09-39	Revenue Decoupling and Return on Equity
National Grid	08/09	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 09-38	Return on Equity – Solar Generation
Bay State Gas Company	04/09	Bay State Gas Company	DTE 09-30	Return on Equity
NSTAR Electric	09/04	NSTAR Electric	DTE 04-85	Divestiture of Power Purchase Agreement
NSTAR Electric	08/04	NSTAR Electric	DTE 04-78	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-68	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-61	Divestiture of Power Purchase Agreement
NSTAR Electric	06/04	NSTAR Electric	DTE 04-60	Divestiture of Power Purchase Agreement
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Minnesota Public Utilities Commission				
Otter Tail Power Corporation	04/10	Otter Tail Power Company	Docket No. E-017/GR-10-239	Return on Equity
Minnesota Power a division of ALLETE, Inc.	11/09	Minnesota Power	Docket No. E015/GR-09-1151	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	11/08	CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-08-1075	Return on Equity
Otter Tail Power Corporation	10/07	Otter Tail Power Company	Docket No. E017/GR-07-1178	Return on Equity
Xcel Energy	11/05	NSP-Minnesota	Docket No. E002/GR-05-1428	Return on Equity (electric)
Xcel Energy	09/04	NSP Minnesota	Docket No. G002/GR-04-1511	Cost of Capital (gas)
Mississippi Public Service Commission				
CenterPoint Energy Resources, Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Mississippi Gas	07/09	CenterPoint Energy Mississippi Gas	Docket No. 09-UN-334	Return on Equity
Missouri Public Service Commission				
Union Electric Company d/b/a AmerenUE	09/10	Union Electric Company d/b/a AmerenUE	Case No. ER-2011-0028	Return on Equity (electric)
Union Electric Company d/b/a AmerenUE	06/10	Union Electric Company d/b/a AmerenUE	Case No. GR-2010-0363	Return on Equity (gas)
New Hampshire Public Utilities Commission				
EnergyNorth Natural Gas d/b/a National Grid NH	02/10	EnergyNorth Natural Gas d/b/a National Grid NH	Docket No. DG 10-017	Return on Equity
Unitil Energy Systems, Inc. ("Unitil"), EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	08/08	Unitil Energy Systems, Inc. ("Unitil"), EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	Docket No. DG 07-072	Carrying Charge Rate on Cash Working Capital
New Jersey Board of Public Utilities				
Pepco Holdings, Inc.	09/06	Atlantic City Electric Company	Docket No. EMO6090638	Divestiture and Valuation of Electric Generating Assets
Pepco Holdings, Inc.	12/05	Atlantic City Electric Company	BPU Docket No. EM05121058	Market Value of Electric Generation Assets; Auction

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Conectiv	06/03	Atlantic City Electric Company	BPU Docket No. EO03020091	Market Value of Electric Generation Assets; Auction Process
New Mexico Public Regulation Commission				
Public Service Company of New Mexico	06/10	Public Service Company of New Mexico	Case No. 10-00086-UT	Return on Equity (electric)
Public Service Company of New Mexico	09/08	Public Service Company of New Mexico	Case No. 08-00273-UT	Return on Equity (electric)
Xcel Energy	07/07	Southwestern Public Service Company	Case No. 07-00319-UT	Return on Equity (electric)
New York State Public Service Commission				
Orange and Rockland Utilities, Inc.	07/10	Orange and Rockland Utilities, Inc.	Case No. 10-E-0362	Return on Equity (electric)
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-G-0795	Return on Equity (gas)
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-S-0794	Return on Equity (steam)
Niagara Mohawk Power Corporation	07/01	Niagara Mohawk Power Corporation	Case No. 01-E-1046	Power Purchase and Sale Agreement; Standard Offer Service Agreement
North Dakota Public Service Commission				
Otter Tail Power Company	11/08	Otter Tail Power Company	Docket No. 08-862	Return on Equity (electric)
Oklahoma Corporation Commission				
CenterPoint Energy Resources Corp., D/B/A CenterPoint Energy Oklahoma Gas	03/09	CenterPoint Energy Oklahoma Gas	Docket No. PUD200900055	Return on Equity
Rhode Island Public Utilities Commission				
National Grid RI – Gas	08/08	National Grid RI – Gas	Docket No. 3943	Revenue Decoupling and Return on Equity
South Carolina Public Service Commission				
South Carolina Electric & Gas	03/10	South Carolina Electric & Gas	Docket No. 2009-489-E	Return on Equity
South Dakota Public Utilities Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Otter Tail Power Company	08/10	Otter Tail Power Company	Docket No. EL10-011	Return on Equity (electric)
Northern States Power Company	06/09	South Dakota Division of Northern States Power	Docket No. EL09-009	Return on Equity (electric)
Otter Tail Power Company	10/08	Otter Tail Power Company	Docket No. EL08-030	Return on Equity (electric)
Texas Public Utility Commission				
Texas-New Mexico Power Company	08/10	Texas-New Mexico Power Company	Docket No. 38480	Return on Equity (electric)
CenterPoint Energy Houston Electric LLC	07/10	CenterPoint Energy Houston Electric LLC	Docket No. 38339	Return on Equity
Xcel Energy	05/10	Southwestern Public Service Company	Docket No. 38147	Return on Equity (electric)
Texas-New Mexico Power Company	08/08	Texas-New Mexico Power Company	Docket No. 36025	Return on Equity (electric)
Xcel Energy	05/06	Southwestern Public Service Company	SOAH Docket No. 473-06-2536 Docket No. 32766	Return on Equity (electric)
Texas Railroad Commission				
Atmos Pipeline - Texas	09/10	Atmos Pipeline - Texas	GUD 10000	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/09	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 9902	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Texas Gas	03/08	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Texas Gas	GUD 9791	Return on Equity
Utah Public Service Commission				
Questar Gas Company	12/07	Questar Gas Company	Docket No. 07-057-13	Return on Equity
Vermont Public Service Board				
Green Mountain Power	04/06	Green Mountain Power	Docket Nos. 7175 and 7176	Return on Equity (electric)
Vermont Gas Systems, Inc.	12/05	Vermont Gas Systems	Docket Nos. 7109 and 7160	Return on Equity (gas)
Virginia State Corporation Commission				
Columbia Gas Of Virginia, Inc.	06/06	Columbia Gas Of Virginia, Inc.	Case No. PUE-2005-00098	Merger Synergies
Dominion Resources	10/01	Virginia Electric and Power Company	Case No. PUE000584	Corporate Structure and Electric Generation Strategy

30-DAY CONSTANT GROWTH DCF

Company		[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks EPS Growth	[6] Value Line EPS Growth	[7] First Call	[8] BR + SV	[9] Average Growth Rate	[10] Low DCF ROE	[11] Mean DCF ROE	[12] High DCF ROE
PROXY GROUP GAS UTILITIES													
AGL Resources	AGL	$1.76	$38.04	4.63%	4.74%	4.00%	5.00%	5.77%	5.52%	5.07%	8.72%	9.82%	10.53%
Atmos Energy	ATO	$1.34	$28.90	4.64%	4.74%	5.00%	5.50%	3.43%	3.68%	4.40%	8.15%	9.14%	10.26%
Laclede Group	LG	$1.58	$34.16	4.62%	4.70%	3.00%	2.50%	3.50%	4.46%	3.36%	7.18%	8.07%	9.19%
New Jersey Resources	NJR	$1.36	$38.48	3.53%	3.62%	4.00%	5.00%	3.33%	6.42%	4.69%	6.92%	8.30%	10.07%
Nicor Inc.	GAS	$1.86	$44.98	4.14%	4.18%	3.50%	1.00%	0.73%	3.97%	2.30%	4.88%	6.48%	8.18%
Northwest Nat. Gas	NWN	$1.74	$46.98	3.70%	3.79%	4.90%	4.50%	4.13%	5.03%	4.64%	7.91%	8.43%	8.82%
Piedmont Natural Gas	PNY	$1.12	$28.37	3.95%	4.02%	4.50%	3.50%	3.93%	3.29%	3.80%	7.30%	7.83%	8.54%
South Jersey Industries	SJI	$1.32	$48.23	2.74%	2.84%	6.50%	7.00%	6.33%	9.29%	7.28%	9.15%	10.12%	12.15%
WGL Holdings Inc.	WGL	$1.51	$36.88	4.09%	4.16%	3.00%	2.50%	3.10%	4.01%	3.15%	6.65%	7.31%	8.18%
		PROXY GROUP MEAN		4.00%	4.09%	4.27%	4.06%	3.81%	5.07%	4.30%	7.43%	8.39%	9.55%

Notes

[1] Source: Bloomberg
[2] Source: Bloomberg. Based on indicated number of days historical average.
[3] Equals Col. [1]/Col. [2]
[4] Equals (Col. [1] x (1+(0.5 x Col. [9])))/Col. [2]
[5] Source: Zacks
[6] Source: Value Line
[7] Source: Yahoo! Finance
[8] Source: Value Line, See Exhibit No. ____(RBH-2)
[9] Equals average of Cols [5] through [8]
[10] Min (Cols [5],[6],[7],[8]) + ([3] x (1 + (0.5 x Min (Cols [5],[6],[7],[8])))
[11] Equals Col. [4] + Col. [9]
[12] Max (Cols [5],[6],[7],[8]) + ([3] x (1 + (0.5 x Max (Cols [5],[6],[7],[8])))

90-DAY CONSTANT GROWTH DCF

Company		[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks EPS Growth	[6] Value Line EPS Growth	[7] First Call	[8] BR + SV	[9] Average Growth Rate	[10] Low DCF ROE	[11] Mean DCF ROE	[12] High DCF ROE
PROXY GROUP GAS UTILITIES													
AGL Resources	AGL	$1.76	$37.64	4.68%	4.79%	4.00%	5.00%	5.77%	5.52%	5.07%	8.77%	9.87%	10.58%
Atmos Energy	ATO	$1.34	$28.55	4.69%	4.80%	5.00%	5.50%	3.43%	3.68%	4.40%	8.20%	9.20%	10.32%
Laclede Group	LG	$1.58	$33.93	4.66%	4.73%	3.00%	2.50%	3.50%	4.46%	3.36%	7.21%	8.10%	9.22%
New Jersey Resources	NJR	$1.36	$37.17	3.66%	3.74%	4.00%	5.00%	3.33%	6.42%	4.69%	7.05%	8.43%	10.19%
Nicor Inc.	GAS	$1.86	$43.30	4.30%	4.34%	3.50%	1.00%	0.73%	3.97%	2.30%	5.04%	6.64%	8.35%
Northwest Nat. Gas	NWN	$1.74	$45.92	3.79%	3.88%	4.90%	4.50%	4.13%	5.03%	4.64%	8.00%	8.52%	8.91%
Piedmont Natural Gas	PNY	$1.12	$27.06	4.14%	4.22%	4.50%	3.50%	3.93%	3.29%	3.80%	7.49%	8.02%	8.73%
South Jersey Industries	SJI	$1.32	$46.27	2.85%	2.96%	6.50%	7.00%	6.33%	9.29%	7.28%	9.27%	10.24%	12.27%
WGL Holdings Inc.	WGL	$1.51	$35.77	4.22%	4.29%	3.00%	2.50%	3.10%	4.01%	3.15%	6.77%	7.44%	8.31%
		PROXY GROUP MEAN		4.11%	4.20%	4.27%	4.06%	3.81%	5.07%	4.30%	7.54%	8.50%	9.65%

Notes
[1] Source: Bloomberg
[2] Source: Bloomberg. Based on indicated number of days historical average.
[3] Equals Col. [1]/Col. [2]
[4] Equals (Col. [1] x (1+(0.5 x Col. [9])))/Col. [2]
[5] Source: Zacks
[6] Source: Value Line
[7] Source: Yahoo! Finance
[8] Source: Value Line, See Exhibit No. ____(RBH-2)
[9] Equals average of Cols [5] through [8]
[10] Min (Cols [5],[6],[7],[8]) + ([3] x (1 + (0.5 x Min (Cols [5],[6],[7],[8])))
[11] Equals Col. [4] + Col. [9]
[12] Max (Cols [5],[6],[7],[8]) + ([3] x (1 + (0.5 x Max (Cols [5],[6],[7],[8])))

180-DAY CONSTANT GROWTH DCF

Company		[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks EPS Growth	[6] Value Line EPS Growth	[7] First Call	[8] BR + SV	[9] Average Growth Rate	[10] Low DCF ROE	[11] Mean DCF ROE	[12] High DCF ROE
PROXY GROUP GAS UTILITIES													
AGL Resources	AGL	$1.76	$37.49	4.69%	4.81%	4.00%	5.00%	5.77%	5.52%	5.07%	8.79%	9.89%	10.60%
Atmos Energy	ATO	$1.34	$28.43	4.71%	4.82%	5.00%	5.50%	3.43%	3.68%	4.40%	8.22%	9.22%	10.34%
Laclede Group	LG	$1.58	$33.78	4.68%	4.76%	3.00%	2.50%	3.50%	4.46%	3.36%	7.24%	8.12%	9.24%
New Jersey Resources	NJR	$1.36	$37.05	3.67%	3.76%	4.00%	5.00%	3.33%	6.42%	4.69%	7.06%	8.44%	10.21%
Nicor Inc.	GAS	$1.86	$42.57	4.37%	4.42%	3.50%	1.00%	0.73%	3.97%	2.30%	5.12%	6.72%	8.42%
Northwest Nat. Gas	NWN	$1.74	$45.77	3.80%	3.89%	4.90%	4.50%	4.13%	5.03%	4.64%	8.01%	8.53%	8.92%
Piedmont Natural Gas	PNY	$1.12	$26.83	4.17%	4.25%	4.50%	3.50%	3.93%	3.29%	3.80%	7.53%	8.06%	8.77%
South Jersey Industries	SJI	$1.32	$44.03	3.00%	3.11%	6.50%	7.00%	6.33%	9.29%	7.28%	9.42%	10.39%	12.43%
WGL Holdings Inc.	WGL	$1.51	$34.92	4.32%	4.39%	3.00%	2.50%	3.10%	4.01%	3.15%	6.88%	7.54%	8.42%
		PROXY GROUP MEAN		4.16%	4.25%	4.27%	4.06%	3.81%	5.07%	4.30%	7.59%	8.55%	9.71%

Notes
[1] Source: Bloomberg
[2] Source: Bloomberg. Based on indicated number of days historical average.
[3] Equals Col. [1]/Col. [2]
[4] Equals (Col. [1] x (1+(0.5 x Col. [9])))/Col. [2]
[5] Source: Zacks
[6] Source: Value Line
[7] Source: Yahoo! Finance
[8] Source: Value Line, See Exhibit No. ____(RBH-2)
[9] Equals average of Cols [5] through [8]
[10] Min (Cols [5],[6],[7],[8]) + ([3] x (1 + (0.5 x Min (Cols [5],[6],[7],[8])))
[11] Equals Col. [4] + Col. [9]
[12] Max (Cols [5],[6],[7],[8]) + ([3] x (1 + (0.5 x Max (Cols [5],[6],[7],[8])))

CALCULATION OF THE RETENTION GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
Company	Ticker	Payout Ratio 1 ("All Div'ds to Net Prof" 2010)	Payout Ratio 2 ("All Div'ds to Net Prof" 2011)	Payout Ratio 3 ("All Div'ds to Net Prof" 13-15)	Average Retention Ratio	Value Line Return on Book Value 1 ("Return on Com Eq" 2010)	Value Line Return on Book Value 2 ("Return on Com Eq" 2011)	Value Line Return on Book Value 3 ("Return on Com Eq" 13-15)	Average Return on Book Value	B*R	Common Shares O/S 2011	Common Shares O/S 13-15	Common Shares Growth Rate	Est. 2010 High	Est. 2010 Low	Est. 2010 Mid	2011 Book Value per sh	Market/ Book Ratio	"S"	"V"	S x V	BR + SV
AGL Resources	AGL	58.00%	57.00%	55.00%	43.33%	12.50%	12.50%	12.00%	12.33%	5.34%	78.50	80.00	0.38%	40.1	34.3	37.20	25.30	1.47	0.56%	31.99%	0.18%	5.52%
Atmos Energy	ATO	63.00%	60.00%	53.00%	41.33%	8.00%	8.50%	9.50%	8.67%	3.58%	90.00	105.00	3.13%	30.2	25.9	28.05	27.20	1.03	3.23%	3.03%	0.10%	3.68%
Laclede Group	LG	70.00%	62.00%	57.00%	37.00%	9.00%	10.00%	11.00%	10.00%	3.70%	23.00	26.00	2.48%	35.9	30.8	33.35	25.55	1.31	3.24%	23.39%	0.76%	4.46%
New Jersey Resources	NJR	53.00%	52.00%	52.00%	47.67%	14.50%	15.00%	14.00%	14.50%	6.91%	41.00	40.00	-0.49%	39.0	33.5	36.25	18.10	2.00	-0.99%	50.07%	-0.49%	6.42%
Nicor Inc.	GAS	68.00%	66.00%	61.00%	35.00%	11.50%	11.50%	11.00%	11.33%	3.97%	45.50	45.50	0.00%	45.4	38.0	41.70	24.60	1.70	0.00%	41.01%	0.00%	3.97%
Northwest Nat. Gas	NWN	61.00%	61.00%	54.00%	41.33%	10.50%	10.50%	12.00%	11.00%	4.55%	26.75	27.70	0.70%	49.2	41.1	45.15	26.80	1.68	1.18%	40.64%	0.48%	5.03%
Piedmont Natural Gas	PNY	71.00%	68.00%	67.00%	31.33%	12.00%	13.00%	13.00%	12.67%	3.97%	71.50	69.00	-0.71%	28.5	23.9	26.20	13.35	1.96	-1.39%	49.05%	-0.68%	3.29%
South Jersey Industries	SJI	51.00%	49.00%	47.00%	51.00%	14.00%	15.00%	14.50%	14.50%	7.40%	31.50	34.00	1.54%	49.1	37.2	43.15	19.35	2.23	3.43%	55.16%	1.89%	9.29%
WGL Holdings Inc.	WGL	65.00%	63.00%	61.00%	37.00%	10.50%	11.00%	11.00%	10.83%	4.01%	50.00	50.00	0.00%	37.3	31.0	34.15	23.55	1.45	0.00%	31.04%	0.00%	4.01%

Notes:
[1] Source: Value Line
[2] Source: Value Line
[3] Source: Value Line
[4] Equals 1 - Mean (Cols. [1], [2] & [3])
[5] Source: Value Line
[6] Source: Value Line
[7] Source: Value Line
[8] Mean (Cols. [5], [6] & [7])
[9] Equals Col. [4] x Col. [8]
[10] Source: Value Line
[11] Source: Value Line
[12] Equals ((Col. [11] / Col. [10]) ^ 0.2) - 1
[13] Source: Value Line
[14] Source: Value Line
[15] Equals Mean (Cols. [13] & [14])
[16] Source: Value Line
[17] Equals Col. [15] / Col. [16]
[18] Equals Col. [12] x Col. [17]
[19] Equals 1 - (1 / Col. [17])
[20] Equals Col. [18] x Col. [19]
[21] Equals Col. [9] + Col. [20]

MULTI-STAGE DCF MODEL -- 30-DAY AVERAGE PRICE
TERMINAL VALUE - GORDON MODEL

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Stock	EPS	GDP		Payout Ratio		Solver Cells			Near Term	Intermediate	Long Term
Company	Ticker	Price	Growth	Growth	2010	2014	2024	Delta	k(e)	Solution	Growth	Growth	Growth
AGL Resources	AGL	$ 38.04	4.92%	5.83%	58.00%	55.00%	71.18%	$ 0.00	11.42%	11.42%	4.92%	5.38%	5.83%
Atmos Energy	ATO	$ 28.90	4.64%	5.83%	63.00%	53.00%	71.18%	$ (0.00)	10.79%	10.79%	4.64%	5.24%	5.83%
Laclede Group	LG	$ 34.16	3.00%	5.83%	70.00%	57.00%	71.18%	$ (0.00)	11.54%	11.54%	3.00%	4.41%	5.83%
New Jersey Resources	NJR	$ 38.48	4.11%	5.83%	53.00%	52.00%	71.18%	$ (0.00)	10.16%	10.16%	4.11%	4.97%	5.83%
Nicor Inc.	GAS	$ 44.98	1.74%	5.83%	68.00%	61.00%	71.18%	$ (0.00)	9.91%	9.91%	1.74%	3.78%	5.83%
Northwest Nat. Gas	NWN	$ 46.98	4.51%	5.83%	61.00%	54.00%	71.18%	$ (0.00)	10.18%	10.18%	4.51%	5.17%	5.83%
Piedmont Natural Gas	PNY	$ 28.37	3.98%	5.83%	71.00%	67.00%	71.18%	$ 0.00	10.11%	10.11%	3.98%	4.90%	5.83%
South Jersey Industries	SJI	$ 48.23	6.61%	5.83%	51.00%	47.00%	71.18%	$ (0.00)	9.83%	9.83%	6.61%	6.22%	5.83%
WGL Holdings Inc.	WGL	$ 36.88	2.87%	5.83%	65.00%	61.00%	71.18%	$ (0.00)	10.38%	10.38%	2.87%	4.35%	5.83%
MEAN:		$ 38.34	4.04%	5.83%	62.22%	56.33%	71.18%			10.48%	4.04%	4.94%	5.83%

Projected Annual Data
Earnings per Share

Company	Ticker	[13] 2009	[14] 2010	[15] 2011	[16] 2012	[17] 2013	[18] 2014	[19] 2015	[20] 2016	[21] 2017	[22] 2018	[23] 2019	[24] 2020	[25] 2021	[26] 2022	[27] 2023	[28] 2024	[29] Terminal Growth
AGL Resources	AGL	$ 2.88	$ 3.02	$ 3.17	$ 3.33	$ 3.49	$ 3.66	$ 3.85	$ 4.05	$ 4.27	$ 4.50	$ 4.76	$ 5.04	$ 5.33	$ 5.64	$ 5.97	$ 6.32	5.83%
Atmos Energy	ATO	$ 1.97	$ 2.06	$ 2.16	$ 2.26	$ 2.36	$ 2.47	$ 2.59	$ 2.72	$ 2.86	$ 3.02	$ 3.19	$ 3.38	$ 3.57	$ 3.78	$ 4.00	$ 4.24	5.83%
Laclede Group	LG	$ 2.92	$ 3.01	$ 3.10	$ 3.19	$ 3.29	$ 3.39	$ 3.50	$ 3.64	$ 3.80	$ 3.99	$ 4.20	$ 4.45	$ 4.71	$ 4.98	$ 5.27	$ 5.58	5.83%
New Jersey Resources	NJR	$ 2.40	$ 2.50	$ 2.60	$ 2.71	$ 2.82	$ 2.94	$ 3.06	$ 3.21	$ 3.37	$ 3.54	$ 3.74	$ 3.96	$ 4.19	$ 4.43	$ 4.69	$ 4.97	5.83%
Nicor Inc.	GAS	$ 2.97	$ 3.02	$ 3.07	$ 3.13	$ 3.18	$ 3.24	$ 3.32	$ 3.42	$ 3.55	$ 3.71	$ 3.90	$ 4.13	$ 4.37	$ 4.62	$ 4.89	$ 5.18	5.83%
Northwest Nat. Gas	NWN	$ 2.83	$ 2.96	$ 3.09	$ 3.23	$ 3.38	$ 3.53	$ 3.70	$ 3.88	$ 4.08	$ 4.30	$ 4.54	$ 4.80	$ 5.08	$ 5.38	$ 5.70	$ 6.03	5.83%
Piedmont Natural Gas	PNY	$ 1.67	$ 1.74	$ 1.81	$ 1.88	$ 1.95	$ 2.03	$ 2.12	$ 2.21	$ 2.32	$ 2.44	$ 2.58	$ 2.73	$ 2.89	$ 3.06	$ 3.23	$ 3.42	5.83%
South Jersey Industries	SJI	$ 2.38	$ 2.54	$ 2.71	$ 2.88	$ 3.07	$ 3.28	$ 3.49	$ 3.71	$ 3.94	$ 4.18	$ 4.43	$ 4.69	$ 4.96	$ 5.25	$ 5.56	$ 5.88	5.83%
WGL Holdings Inc.	WGL	$ 2.53	$ 2.60	$ 2.68	$ 2.75	$ 2.83	$ 2.91	$ 3.01	$ 3.13	$ 3.26	$ 3.42	$ 3.60	$ 3.82	$ 4.04	$ 4.27	$ 4.52	$ 4.79	5.83%

Projected Annual Data
Dividend Payout Ratio

Company	Ticker	[30] 2010	[31] 2011	[32] 2012	[33] 2013	[34] 2014	[35] 2015	[36] 2016	[37] 2017	[38] 2018	[39] 2019	[40] 2020	[41] 2021	[42] 2022	[43] 2023	[44] 2024
AGL Resources	AGL	58.00%	57.25%	56.50%	55.75%	55.00%	58.24%	61.47%	64.71%	67.95%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Atmos Energy	ATO	63.00%	60.50%	58.00%	55.50%	53.00%	56.64%	60.27%	63.91%	67.55%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Laclede Group	LG	70.00%	66.75%	63.50%	60.25%	57.00%	58.84%	62.67%	65.51%	68.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
New Jersey Resources	NJR	53.00%	52.75%	52.50%	52.25%	52.00%	55.84%	59.67%	63.51%	67.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Nicor Inc.	GAS	68.00%	66.25%	64.50%	62.75%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Northwest Nat. Gas	NWN	61.00%	59.25%	57.50%	55.75%	54.00%	57.44%	60.87%	64.31%	67.75%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Piedmont Natural Gas	PNY	71.00%	70.00%	69.00%	68.00%	67.00%	67.84%	68.67%	69.51%	70.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
South Jersey Industries	SJI	51.00%	50.00%	49.00%	48.00%	47.00%	51.84%	56.67%	61.51%	66.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
WGL Holdings Inc.	WGL	65.00%	64.00%	63.00%	62.00%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%

Projected Annual Data
Dividends per Share & Terminal Market Value

Company	Ticker	[45] 2010	[46] 2011	[47] 2012	[48] 2013	[49] 2014	[50] 2015	[51] 2016	[52] 2017	[53] 2018	[54] 2019	[55] 2020	[56] 2021	[57] 2022	[58] 2023	[59] 2024	[60] Terminal Price	[61] Terminal P/E Ratio
AGL Resources	AGL	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 4.50	$ 85.15	13.48
Atmos Energy	ATO	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 3.02	$ 64.38	15.20
Laclede Group	LG	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 3.97	$ 73.56	13.19
New Jersey Resources	NJR	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 3.54	$ 86.36	17.39
Nicor Inc.	GAS	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 3.68	$ 95.72	18.49
Northwest Nat. Gas	NWN	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 4.29	$ 104.33	17.31
Piedmont Natural Gas	PNY	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 2.44	$ 60.33	17.62
South Jersey Industries	SJI	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 4.19	$ 110.89	18.85
WGL Holdings Inc.	WGL	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 3.41	$ 79.26	16.56
																		16.45

Projected Annual Data
Investor Cash Flows

Company	Ticker	[62] Initial Outflow	[63] 10/8/10	[64] 12/31/10	[65] 7/1/11	[66] 7/1/12	[67] 7/1/13	[68] 7/1/14	[69] 7/1/15	[70] 7/1/16	[71] 7/1/17	[72] 7/1/18	[73] 7/1/19	[74] 7/1/20	[75] 7/1/21	[76] 7/1/22	[77] 7/1/23	[78] 7/1/24
AGL Resources	AGL	($38.04)	$0.00	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 89.64
Atmos Energy	ATO	($28.90)	$0.00	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 67.40
Laclede Group	LG	($34.16)	$0.00	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 77.53
New Jersey Resources	NJR	($38.48)	$0.00	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 89.90
Nicor Inc.	GAS	($44.98)	$0.00	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 99.41
Northwest Nat. Gas	NWN	($46.98)	$0.00	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 108.62
Piedmont Natural Gas	PNY	($28.37)	$0.00	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 62.76
South Jersey Industries	SJI	($48.23)	$0.00	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 115.08
WGL Holdings Inc.	WGL	($36.88)	$0.00	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 82.67

MULTI-STAGE DCF MODEL – 90-DAY AVERAGE PRICE
TERMINAL VALUE - GORDON MODEL

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Stock	EPS	GDP		Payout Ratio		Solver Cells			Near Term	Intermediate	Long Term
Company	Ticker	Price	Growth	Growth	2010	2014	2024	Delta	k(e)	Solution	Growth	Growth	Growth
AGL Resources	AGL	$ 37.64	4.92%	5.83%	58.00%	55.00%	71.18%	$ (0.00)	11.48%	11.48%	4.92%	5.38%	5.83%
Atmos Energy	ATO	$ 28.55	4.64%	5.83%	63.00%	53.00%	71.18%	$ (0.00)	10.85%	10.85%	4.64%	5.24%	5.83%
Laclede Group	LG	$ 33.93	3.00%	5.83%	70.00%	57.00%	71.18%	$ (0.00)	11.58%	11.58%	3.00%	4.41%	5.83%
New Jersey Resources	NJR	$ 37.17	4.11%	5.83%	53.00%	52.00%	71.18%	$ (0.00)	10.31%	10.31%	4.11%	4.97%	5.83%
Nicor Inc.	GAS	$ 43.30	1.74%	5.83%	68.00%	61.00%	71.18%	$ (0.00)	10.07%	10.07%	1.74%	3.78%	5.83%
Northwest Nat. Gas	NWN	$ 45.92	4.51%	5.83%	61.00%	54.00%	71.18%	$ 0.00	10.28%	10.28%	4.51%	5.17%	5.83%
Piedmont Natural Gas	PNY	$ 27.06	3.98%	5.83%	71.00%	67.00%	71.18%	$ (0.00)	10.32%	10.32%	3.98%	4.90%	5.83%
South Jersey Industries	SJI	$ 46.27	6.61%	5.83%	51.00%	47.00%	71.18%	$ (0.00)	9.99%	9.99%	6.61%	6.22%	5.83%
WGL Holdings Inc.	WGL	$ 35.77	2.87%	5.83%	65.00%	61.00%	71.18%	$ (0.00)	10.52%	10.52%	2.87%	4.35%	5.83%
MEAN:		$ 37.29	4.04%	5.83%	62.22%	56.33%	71.18%			10.60%	4.04%	4.94%	5.83%

Projected Annual Data
Earnings per Share

Company	Ticker	[13] 2009	[14] 2010	[15] 2011	[16] 2012	[17] 2013	[18] 2014	[19] 2015	[20] 2016	[21] 2017	[22] 2018	[23] 2019	[24] 2020	[25] 2021	[26] 2022	[27] 2023	[28] 2024	[29] Terminal Growth
AGL Resources	AGL	$ 2.88	$ 3.02	$ 3.17	$ 3.33	$ 3.49	$ 3.66	$ 3.85	$ 4.05	$ 4.27	$ 4.50	$ 4.76	$ 5.04	$ 5.33	$ 5.64	$ 5.97	$ 6.32	5.83%
Atmos Energy	ATO	$ 1.97	$ 2.06	$ 2.16	$ 2.26	$ 2.36	$ 2.47	$ 2.59	$ 2.72	$ 2.88	$ 3.02	$ 3.19	$ 3.38	$ 3.57	$ 3.78	$ 4.00	$ 4.24	5.83%
Laclede Group	LG	$ 2.92	$ 3.01	$ 3.10	$ 3.19	$ 3.29	$ 3.39	$ 3.50	$ 3.64	$ 3.80	$ 3.99	$ 4.20	$ 4.45	$ 4.71	$ 4.98	$ 5.27	$ 5.58	5.83%
New Jersey Resources	NJR	$ 2.40	$ 2.50	$ 2.60	$ 2.71	$ 2.82	$ 2.94	$ 3.06	$ 3.21	$ 3.37	$ 3.54	$ 3.74	$ 3.96	$ 4.19	$ 4.43	$ 4.69	$ 4.97	5.83%
Nicor Inc.	GAS	$ 2.97	$ 3.02	$ 3.07	$ 3.13	$ 3.18	$ 3.24	$ 3.32	$ 3.42	$ 3.55	$ 3.71	$ 3.90	$ 4.13	$ 4.37	$ 4.62	$ 4.89	$ 5.18	5.83%
Northwest Nat. Gas	NWN	$ 2.83	$ 2.96	$ 3.09	$ 3.23	$ 3.38	$ 3.53	$ 3.70	$ 3.88	$ 4.08	$ 4.30	$ 4.54	$ 4.80	$ 5.08	$ 5.38	$ 5.70	$ 6.03	5.83%
Piedmont Natural Gas	PNY	$ 1.67	$ 1.74	$ 1.81	$ 1.88	$ 1.95	$ 2.03	$ 2.12	$ 2.21	$ 2.32	$ 2.44	$ 2.58	$ 2.73	$ 2.89	$ 3.06	$ 3.23	$ 3.42	5.83%
South Jersey Industries	SJI	$ 2.38	$ 2.54	$ 2.71	$ 2.88	$ 3.07	$ 3.28	$ 3.49	$ 3.71	$ 3.94	$ 4.18	$ 4.43	$ 4.69	$ 4.96	$ 5.25	$ 5.56	$ 5.88	5.83%
WGL Holdings Inc.	WGL	$ 2.53	$ 2.60	$ 2.68	$ 2.75	$ 2.83	$ 2.91	$ 3.01	$ 3.13	$ 3.26	$ 3.42	$ 3.60	$ 3.82	$ 4.04	$ 4.27	$ 4.52	$ 4.79	5.83%

Projected Annual Data
Dividend Payout Ratio

Company	Ticker	[30] 2010	[31] 2011	[32] 2012	[33] 2013	[34] 2014	[35] 2015	[36] 2016	[37] 2017	[38] 2018	[39] 2019	[40] 2020	[41] 2021	[42] 2022	[43] 2023	[44] 2024
AGL Resources	AGL	58.00%	57.25%	56.50%	55.75%	55.00%	58.24%	61.47%	64.71%	67.95%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Atmos Energy	ATO	63.00%	60.50%	58.00%	55.50%	53.00%	56.64%	60.27%	63.91%	67.55%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Laclede Group	LG	70.00%	66.75%	63.50%	60.25%	57.00%	59.84%	62.67%	65.51%	68.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
New Jersey Resources	NJR	53.00%	52.75%	52.50%	52.25%	52.00%	55.84%	59.67%	63.51%	67.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Nicor Inc.	GAS	68.00%	66.25%	64.50%	62.75%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Northwest Nat. Gas	NWN	61.00%	59.25%	57.50%	55.75%	54.00%	57.44%	60.87%	64.31%	67.75%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Piedmont Natural Gas	PNY	71.00%	70.00%	69.00%	68.00%	67.00%	67.84%	68.67%	69.51%	70.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
South Jersey Industries	SJI	51.00%	50.00%	49.00%	48.00%	47.00%	51.84%	56.67%	61.51%	66.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
WGL Holdings Inc.	WGL	65.00%	64.00%	63.00%	62.00%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%

Projected Annual Data
Dividends per Share & Terminal Market Value

Company	Ticker	[45] 2010	[46] 2011	[47] 2012	[48] 2013	[49] 2014	[50] 2015	[51] 2016	[52] 2017	[53] 2018	[54] 2019	[55] 2020	[56] 2021	[57] 2022	[58] 2023	[59] 2024	[60] Terminal Price	[61] Terminal P/E Ratio
AGL Resources	AGL	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 4.50	$ 84.27	13.34
Atmos Energy	ATO	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 3.02	$ 63.61	15.02
Laclede Group	LG	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 3.97	$ 73.05	13.10
New Jersey Resources	NJR	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 3.54	$ 83.48	16.81
Nicor Inc.	GAS	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 3.68	$ 92.07	17.79
Northwest Nat. Gas	NWN	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 4.29	$ 102.00	16.92
Piedmont Natural Gas	PNY	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 2.44	$ 57.47	16.79
South Jersey Industries	SJI	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 4.19	$ 106.58	18.11
WGL Holdings Inc.	WGL	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 3.41	$ 76.84	16.05
																		15.99

Projected Annual Data
Investor Cash Flows

Company	Ticker	[62] Initial Outflow	[63] 10/8/10	[64] 12/31/10	[65] 7/1/11	[66] 7/1/12	[67] 7/1/13	[68] 7/1/14	[69] 7/1/15	[70] 7/1/16	[71] 7/1/17	[72] 7/1/18	[73] 7/1/19	[74] 7/1/20	[75] 7/1/21	[76] 7/1/22	[77] 7/1/23	[78] 7/1/24
AGL Resources	AGL	($37.64)	$0.00	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 88.76
Atmos Energy	ATO	($28.55)	$0.00	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 66.63
Laclede Group	LG	($33.93)	$0.00	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 77.02
New Jersey Resources	NJR	($37.17)	$0.00	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 87.02
Nicor Inc.	GAS	($43.30)	$0.00	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 95.76
Northwest Nat. Gas	NWN	($45.92)	$0.00	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 106.29
Piedmont Natural Gas	PNY	($27.06)	$0.00	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 59.90
South Jersey Industries	SJI	($46.27)	$0.00	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 110.77
WGL Holdings Inc.	WGL	($35.77)	$0.00	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 80.24

MULTI-STAGE DCF MODEL - 180-DAY AVERAGE PRICE
TERMINAL VALUE - GORDON MODEL

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Stock	EPS	GDP		Payout Ratio		Solver Cells			Near Term	Intermediate	Long Term
Company	Ticker	Price	Growth	Growth	2010	2014	2024	Delta	k(e)	Solution	Growth	Growth	Growth
AGL Resources	AGL	$ 37.49	4.92%	5.83%	58.00%	55.00%	71.18%	$ (0.00)	11.50%	11.50%	4.92%	5.38%	5.83%
Atmos Energy	ATO	$ 28.43	4.64%	5.83%	63.00%	53.00%	71.18%	$ (0.00)	10.87%	10.87%	4.64%	5.24%	5.83%
Laclede Group	LG	$ 33.78	3.00%	5.83%	70.00%	57.00%	71.18%	$ (0.00)	11.61%	11.61%	3.00%	4.41%	5.83%
New Jersey Resources	NJR	$ 37.05	4.11%	5.83%	53.00%	52.00%	71.18%	$ (0.00)	10.33%	10.33%	4.11%	4.97%	5.83%
Nicor Inc.	GAS	$ 42.57	1.74%	5.83%	68.00%	61.00%	71.18%	$ (0.00)	10.14%	10.14%	1.74%	3.78%	5.83%
Northwest Nat. Gas	NWN	$ 45.77	4.51%	5.83%	61.00%	54.00%	71.18%	$ (0.00)	10.30%	10.30%	4.51%	5.17%	5.83%
Piedmont Natural Gas	PNY	$ 26.83	3.98%	5.83%	71.00%	67.00%	71.18%	$ (0.00)	10.36%	10.36%	3.98%	4.90%	5.83%
South Jersey Industries	SJI	$ 44.03	6.61%	5.83%	51.00%	47.00%	71.18%	$ (0.00)	10.19%	10.19%	6.61%	6.22%	5.83%
WGL Holdings Inc.	WGL	$ 34.92	2.87%	5.83%	65.00%	61.00%	71.18%	$ (0.00)	10.64%	10.64%	2.87%	4.35%	5.83%
MEAN:		$ 36.76	4.04%	5.83%	62.22%	56.33%	71.18%			10.66%	4.04%	4.94%	5.83%

Projected Annual Data

Earnings per Share		[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Terminal Growth
AGL Resources	AGL	$ 2.88	$ 3.02	$ 3.17	$ 3.33	$ 3.49	$ 3.66	$ 3.85	$ 4.05	$ 4.27	$ 4.50	$ 4.76	$ 5.04	$ 5.33	$ 5.64	$ 5.97	$ 6.32	5.83%
Atmos Energy	ATO	$ 1.97	$ 2.06	$ 2.16	$ 2.26	$ 2.36	$ 2.47	$ 2.59	$ 2.72	$ 2.86	$ 3.02	$ 3.19	$ 3.38	$ 3.57	$ 3.78	$ 4.00	$ 4.24	5.83%
Laclede Group	LG	$ 2.92	$ 3.01	$ 3.10	$ 3.19	$ 3.29	$ 3.39	$ 3.50	$ 3.64	$ 3.80	$ 3.99	$ 4.20	$ 4.45	$ 4.71	$ 4.98	$ 5.27	$ 5.58	5.83%
New Jersey Resources	NJR	$ 2.40	$ 2.50	$ 2.60	$ 2.71	$ 2.82	$ 2.94	$ 3.06	$ 3.21	$ 3.37	$ 3.54	$ 3.74	$ 3.96	$ 4.19	$ 4.43	$ 4.69	$ 4.97	5.83%
Nicor Inc.	GAS	$ 2.97	$ 3.02	$ 3.07	$ 3.13	$ 3.18	$ 3.24	$ 3.32	$ 3.42	$ 3.55	$ 3.71	$ 3.90	$ 4.13	$ 4.37	$ 4.62	$ 4.89	$ 5.18	5.83%
Northwest Nat. Gas	NWN	$ 2.83	$ 2.96	$ 3.09	$ 3.23	$ 3.38	$ 3.53	$ 3.70	$ 3.88	$ 4.08	$ 4.30	$ 4.54	$ 4.80	$ 5.08	$ 5.38	$ 5.70	$ 6.03	5.83%
Piedmont Natural Gas	PNY	$ 1.67	$ 1.74	$ 1.81	$ 1.88	$ 1.95	$ 2.03	$ 2.12	$ 2.21	$ 2.32	$ 2.44	$ 2.58	$ 2.73	$ 2.89	$ 3.06	$ 3.23	$ 3.42	5.83%
South Jersey Industries	SJI	$ 2.38	$ 2.54	$ 2.71	$ 2.88	$ 3.07	$ 3.28	$ 3.49	$ 3.71	$ 3.94	$ 4.18	$ 4.43	$ 4.69	$ 4.96	$ 5.25	$ 5.56	$ 5.88	5.83%
WGL Holdings Inc.	WGL	$ 2.53	$ 2.60	$ 2.68	$ 2.75	$ 2.83	$ 2.91	$ 3.01	$ 3.13	$ 3.26	$ 3.42	$ 3.60	$ 3.82	$ 4.04	$ 4.27	$ 4.52	$ 4.79	5.83%

Projected Annual Data

Dividend Payout Ratio		[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]
Company	Ticker	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AGL Resources	AGL	58.00%	57.25%	56.50%	55.75%	55.00%	58.24%	61.47%	64.71%	67.95%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Atmos Energy	ATO	63.00%	60.50%	58.00%	55.50%	53.00%	56.64%	60.27%	63.91%	67.55%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Laclede Group	LG	70.00%	66.75%	63.50%	60.25%	57.00%	59.84%	62.67%	65.51%	68.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
New Jersey Resources	NJR	53.00%	52.75%	52.50%	52.25%	52.00%	55.84%	59.67%	63.51%	67.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Nicor Inc.	GAS	68.00%	66.25%	64.50%	62.75%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Northwest Nat. Gas	NWN	61.00%	59.25%	57.50%	55.75%	54.00%	57.44%	60.87%	64.31%	67.75%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Piedmont Natural Gas	PNY	71.00%	70.00%	69.00%	68.00%	67.00%	67.84%	68.67%	69.51%	70.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
South Jersey Industries	SJI	51.00%	50.00%	49.00%	48.00%	47.00%	51.84%	56.67%	61.51%	66.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
WGL Holdings Inc.	WGL	65.00%	64.00%	63.00%	62.00%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%

Projected Annual Data

Dividends per Share & Terminal Market Value		[45]	[46]	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]
Company	Ticker	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Terminal Price	Terminal P/E Ratio
AGL Resources	AGL	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 4.50	$ 83.94	13.29
Atmos Energy	ATO	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 3.02	$ 63.35	14.95
Laclede Group	LG	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 3.97	$ 72.72	13.04
New Jersey Resources	NJR	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 3.54	$ 83.22	16.76
Nicor Inc.	GAS	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 3.68	$ 90.48	17.48
Northwest Nat. Gas	NWN	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 4.29	$ 101.67	16.87
Piedmont Natural Gas	PNY	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 2.44	$ 56.96	16.64
South Jersey Industries	SJI	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 4.19	$ 101.65	17.28
WGL Holdings Inc.	WGL	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 3.41	$ 74.97	15.67
																		15.77

Projected Annual Data

Investor Cash Flows		[62]	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]
Company	Ticker	Initial Outflow	10/8/10	12/31/10	7/1/11	7/1/12	7/1/13	7/1/14	7/1/15	7/1/16	7/1/17	7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24
AGL Resources	AGL	($37.49)	$0.00	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 88.44
Atmos Energy	ATO	($28.43)	$0.00	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 66.36
Laclede Group	LG	($33.78)	$0.00	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 76.69
New Jersey Resources	NJR	($37.05)	$0.00	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 86.76
Nicor Inc.	GAS	($42.57)	$0.00	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 94.17
Northwest Nat. Gas	NWN	($45.77)	$0.00	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 105.96
Piedmont Natural Gas	PNY	($26.83)	$0.00	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 59.40
South Jersey Industries	SJI	($44.03)	$0.00	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 105.84
WGL Holdings Inc.	WGL	($34.92)	$0.00	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 78.38

MULTI-STAGE DCF MODEL – 30-DAY AVERAGE PRICE
TERMINAL VALUE - LONG-TERM PROJECTED PRICE-TO-EARNINGS RATIO

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Stock	EPS	GDP	Payout Ratio			Solver Cells			Near Term	Intermediate	Long Term
Company	Ticker	Price	Growth	Growth	2010	2014	2024	Delta	k(e)	Solution	Growth	Growth	Growth
AGL Resources	AGL	$ 38.04	4.92%	5.83%	58.00%	55.00%	71.18%	$ 0.00	12.02%	12.02%	4.92%	5.38%	5.83%
Atmos Energy	ATO	$ 28.90	4.64%	5.83%	63.00%	53.00%	71.18%	$ 0.00	9.91%	9.91%	4.64%	5.24%	5.83%
Laclede Group	LG	$ 34.16	3.00%	5.83%	70.00%	57.00%	71.18%	$ (0.00)	12.63%	12.63%	3.00%	4.41%	5.83%
New Jersey Resources	NJR	$ 38.48	4.11%	5.83%	53.00%	52.00%	71.18%	$ 0.00	8.90%	8.90%	4.11%	4.97%	5.83%
Nicor Inc.	GAS	$ 44.98	1.74%	5.83%	68.00%	61.00%	71.18%	$ 0.00	9.05%	9.05%	1.74%	3.78%	5.83%
Northwest Nat. Gas	NWN	$ 46.98	4.51%	5.83%	61.00%	54.00%	71.18%	$ 0.00	10.08%	10.08%	4.51%	5.17%	5.83%
Piedmont Natural Gas	PNY	$ 28.37	3.98%	5.83%	71.00%	67.00%	71.18%	$ 0.00	10.23%	10.23%	3.98%	4.90%	5.83%
South Jersey Industries	SJI	$ 48.23	6.61%	5.83%	51.00%	47.00%	71.18%	$ 0.00	8.07%	8.07%	6.61%	6.22%	5.83%
WGL Holdings Inc.	WGL	$ 36.88	2.87%	5.83%	65.00%	61.00%	71.18%	$ 0.00	9.81%	9.81%	2.87%	4.35%	5.83%
MEAN:		$ 38.34	4.04%	5.83%	62.22%	56.33%	71.18%			10.08%	4.04%	4.94%	5.83%

Projected Annual Data
Earnings per Share

Company	Ticker	[13] 2009	[14] 2010	[15] 2011	[16] 2012	[17] 2013	[18] 2014	[19] 2015	[20] 2016	[21] 2017	[22] 2018	[23] 2019	[24] 2020	[25] 2021	[26] 2022	[27] 2023	[28] 2024	[29] Terminal Growth
AGL Resources	AGL	$ 2.88	$ 3.02	$ 3.17	$ 3.33	$ 3.49	$ 3.66	$ 3.85	$ 4.05	$ 4.27	$ 4.50	$ 4.76	$ 5.04	$ 5.33	$ 5.64	$ 5.97	$ 6.32	5.83%
Atmos Energy	ATO	$ 1.97	$ 2.06	$ 2.16	$ 2.26	$ 2.36	$ 2.47	$ 2.59	$ 2.72	$ 2.86	$ 3.02	$ 3.19	$ 3.38	$ 3.57	$ 3.78	$ 4.00	$ 4.24	5.83%
Laclede Group	LG	$ 2.92	$ 3.01	$ 3.10	$ 3.19	$ 3.29	$ 3.39	$ 3.50	$ 3.64	$ 3.80	$ 3.99	$ 4.20	$ 4.45	$ 4.71	$ 4.98	$ 5.27	$ 5.58	5.83%
New Jersey Resources	NJR	$ 2.40	$ 2.50	$ 2.60	$ 2.71	$ 2.82	$ 2.94	$ 3.06	$ 3.21	$ 3.37	$ 3.54	$ 3.74	$ 3.96	$ 4.19	$ 4.43	$ 4.69	$ 4.97	5.83%
Nicor Inc.	GAS	$ 2.97	$ 3.02	$ 3.07	$ 3.13	$ 3.18	$ 3.24	$ 3.32	$ 3.42	$ 3.55	$ 3.71	$ 3.90	$ 4.13	$ 4.37	$ 4.62	$ 4.89	$ 5.18	5.83%
Northwest Nat. Gas	NWN	$ 2.83	$ 2.96	$ 3.09	$ 3.23	$ 3.38	$ 3.53	$ 3.70	$ 3.88	$ 4.08	$ 4.30	$ 4.54	$ 4.80	$ 5.08	$ 5.38	$ 5.70	$ 6.03	5.83%
Piedmont Natural Gas	PNY	$ 1.67	$ 1.74	$ 1.81	$ 1.88	$ 1.95	$ 2.03	$ 2.12	$ 2.21	$ 2.32	$ 2.44	$ 2.58	$ 2.73	$ 2.89	$ 3.06	$ 3.23	$ 3.42	5.83%
South Jersey Industries	SJI	$ 2.38	$ 2.54	$ 2.71	$ 2.88	$ 3.07	$ 3.28	$ 3.49	$ 3.71	$ 3.94	$ 4.18	$ 4.43	$ 4.69	$ 4.96	$ 5.25	$ 5.56	$ 5.88	5.83%
WGL Holdings Inc.	WGL	$ 2.53	$ 2.60	$ 2.68	$ 2.75	$ 2.83	$ 2.91	$ 3.01	$ 3.13	$ 3.26	$ 3.42	$ 3.60	$ 3.82	$ 4.04	$ 4.27	$ 4.52	$ 4.79	5.83%

Projected Annual Data
Dividend Payout Ratio

Company	Ticker	[30] 2010	[31] 2011	[32] 2012	[33] 2013	[34] 2014	[35] 2015	[36] 2016	[37] 2017	[38] 2018	[39] 2019	[40] 2020	[41] 2021	[42] 2022	[43] 2023	[44] 2024
AGL Resources	AGL	58.00%	57.25%	56.50%	55.75%	55.00%	58.24%	61.47%	64.71%	67.95%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Atmos Energy	ATO	63.00%	60.50%	58.00%	55.50%	53.00%	56.64%	60.27%	63.91%	67.55%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Laclede Group	LG	70.00%	66.75%	63.50%	60.25%	57.00%	59.84%	62.67%	65.51%	68.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
New Jersey Resources	NJR	53.00%	52.75%	52.50%	52.25%	52.00%	55.84%	59.67%	63.51%	67.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Nicor Inc.	GAS	68.00%	66.25%	64.50%	62.75%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Northwest Nat. Gas	NWN	61.00%	59.25%	57.50%	55.75%	54.00%	57.44%	60.87%	64.31%	67.75%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Piedmont Natural Gas	PNY	71.00%	70.00%	69.00%	68.00%	67.00%	67.84%	68.67%	69.51%	70.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
South Jersey Industries	SJI	51.00%	50.00%	49.00%	48.00%	47.00%	51.84%	56.67%	61.51%	66.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
WGL Holdings Inc.	WGL	65.00%	64.00%	63.00%	62.00%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%

Projected Annual Data
Dividends per Share & Terminal Market Value

Company	Ticker	[45] 2010	[46] 2011	[47] 2012	[48] 2013	[49] 2014	[50] 2015	[51] 2016	[52] 2017	[53] 2018	[54] 2019	[55] 2020	[56] 2021	[57] 2022	[58] 2023	[59] 2024	[60] Terminal Price	[61] Terminal P/E Ratio
AGL Resources	AGL	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 4.50	$ 94.77	15.00
Atmos Energy	ATO	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 3.02	$ 55.07	13.00
Laclede Group	LG	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 3.97	$ 89.24	16.00
New Jersey Resources	NJR	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 3.54	$ 69.54	14.00
Nicor Inc.	GAS	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 3.68	$ 82.82	16.00
Northwest Nat. Gas	NWN	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 4.29	$ 102.47	17.00
Piedmont Natural Gas	PNY	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 2.44	$ 61.62	18.00
South Jersey Industries	SJI	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 4.19	$ 82.38	14.00
WGL Holdings Inc.	WGL	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 3.41	$ 71.79	15.00
																		15.33

Projected Annual Data
Investor Cash Flows

Company	Ticker	[62] Initial Outflow	[63] 10/8/10	[64] 12/31/10	[65] 7/1/11	[66] 7/1/12	[67] 7/1/13	[68] 7/1/14	[69] 7/1/15	[70] 7/1/16	[71] 7/1/17	[72] 7/1/18	[73] 7/1/19	[74] 7/1/20	[75] 7/1/21	[76] 7/1/22	[77] 7/1/23	[78] 7/1/24
AGL Resources	AGL	($38.04)	$0.00	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 99.27
Atmos Energy	ATO	($28.90)	$0.00	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 58.08
Laclede Group	LG	($34.16)	$0.00	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 93.21
New Jersey Resources	NJR	($38.48)	$0.00	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 73.07
Nicor Inc.	GAS	($44.98)	$0.00	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 86.50
Northwest Nat. Gas	NWN	($46.98)	$0.00	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 106.76
Piedmont Natural Gas	PNY	($28.37)	$0.00	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 64.05
South Jersey Industries	SJI	($48.23)	$0.00	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 86.57
WGL Holdings Inc.	WGL	($36.88)	$0.00	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 75.20

MULTI-STAGE DCF MODEL – 90-DAY AVERAGE PRICE
TERMINAL VALUE - LONG-TERM PROJECTED PRICE-TO-EARNINGS RATIO

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Stock	EPS	GDP	Payout Ratio			Solver Cells			Near Term	Intermediat	Long Term
Company	Ticker	Price	Growth	Growth	2010	2014	2024	Delta	k(e)	Solution	Growth	Growth	Growth
AGL Resources	AGL	$ 37.64	4.92%	5.83%	58.00%	55.00%	71.18%	$ 0.00	12.14%	12.14%	4.92%	5.38%	5.83%
Atmos Energy	ATO	$ 28.55	4.64%	5.83%	63.00%	53.00%	71.18%	$ (0.00)	10.04%	10.04%	4.64%	5.24%	5.83%
Laclede Group	LG	$ 33.93	3.00%	5.83%	70.00%	57.00%	71.18%	$ 0.00	12.70%	12.70%	3.00%	4.41%	5.83%
New Jersey Resources	NJR	$ 37.17	4.11%	5.83%	53.00%	52.00%	71.18%	$ (0.00)	9.26%	9.26%	4.11%	4.97%	5.83%
Nicor Inc.	GAS	$ 43.30	1.74%	5.83%	68.00%	61.00%	71.18%	$ (0.00)	9.45%	9.45%	1.74%	3.78%	5.83%
Northwest Nat. Gas	NWN	$ 45.92	4.51%	5.83%	61.00%	54.00%	71.18%	$ (0.00)	10.31%	10.31%	4.51%	5.17%	5.83%
Piedmont Natural Gas	PNY	$ 27.06	3.98%	5.83%	71.00%	67.00%	71.18%	$ (0.00)	10.73%	10.73%	3.98%	4.90%	5.83%
South Jersey Industries	SJI	$ 46.27	6.61%	5.83%	51.00%	47.00%	71.18%	$ (0.00)	8.47%	8.47%	6.61%	6.22%	5.83%
WGL Holdings Inc.	WGL	$ 35.77	2.87%	5.83%	65.00%	61.00%	71.18%	$ (0.00)	10.14%	10.14%	2.87%	4.35%	5.83%
MEAN:		$ 37.29	4.04%	5.83%	62.22%	56.33%	71.18%			10.36%	4.04%	4.94%	5.83%

Projected Annual Data

Earnings per Share		[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Terminal Growth
AGL Resources	AGL	$ 2.88	$ 3.02	$ 3.17	$ 3.33	$ 3.49	$ 3.66	$ 3.85	$ 4.05	$ 4.27	$ 4.50	$ 4.76	$ 5.04	$ 5.33	$ 5.64	$ 5.97	$ 6.32	5.83%
Atmos Energy	ATO	$ 1.97	$ 2.06	$ 2.16	$ 2.26	$ 2.36	$ 2.47	$ 2.59	$ 2.72	$ 2.86	$ 3.02	$ 3.19	$ 3.38	$ 3.57	$ 3.78	$ 4.00	$ 4.24	5.83%
Laclede Group	LG	$ 2.92	$ 3.01	$ 3.10	$ 3.19	$ 3.29	$ 3.39	$ 3.50	$ 3.64	$ 3.80	$ 3.99	$ 4.20	$ 4.45	$ 4.71	$ 4.98	$ 5.27	$ 5.58	5.83%
New Jersey Resources	NJR	$ 2.40	$ 2.50	$ 2.60	$ 2.71	$ 2.82	$ 2.94	$ 3.06	$ 3.21	$ 3.37	$ 3.54	$ 3.74	$ 3.96	$ 4.19	$ 4.43	$ 4.69	$ 4.97	5.83%
Nicor Inc.	GAS	$ 2.97	$ 3.02	$ 3.07	$ 3.13	$ 3.18	$ 3.24	$ 3.32	$ 3.42	$ 3.55	$ 3.71	$ 3.90	$ 4.13	$ 4.37	$ 4.62	$ 4.89	$ 5.18	5.83%
Northwest Nat. Gas	NWN	$ 2.83	$ 2.96	$ 3.09	$ 3.23	$ 3.38	$ 3.53	$ 3.70	$ 3.88	$ 4.08	$ 4.30	$ 4.54	$ 4.80	$ 5.08	$ 5.38	$ 5.70	$ 6.03	5.83%
Piedmont Natural Gas	PNY	$ 1.67	$ 1.74	$ 1.81	$ 1.88	$ 1.95	$ 2.03	$ 2.12	$ 2.21	$ 2.32	$ 2.44	$ 2.58	$ 2.73	$ 2.89	$ 3.06	$ 3.23	$ 3.42	5.83%
South Jersey Industries	SJI	$ 2.38	$ 2.54	$ 2.71	$ 2.88	$ 3.07	$ 3.28	$ 3.49	$ 3.71	$ 3.94	$ 4.18	$ 4.43	$ 4.69	$ 4.96	$ 5.25	$ 5.56	$ 5.88	5.83%
WGL Holdings Inc.	WGL	$ 2.53	$ 2.60	$ 2.68	$ 2.75	$ 2.83	$ 2.91	$ 3.01	$ 3.13	$ 3.26	$ 3.42	$ 3.60	$ 3.82	$ 4.04	$ 4.27	$ 4.52	$ 4.79	5.83%

Projected Annual Data

Dividend Payout Ratio		[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]
Company	Ticker	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AGL Resources	AGL	58.00%	57.25%	56.50%	55.75%	55.00%	58.24%	61.47%	64.71%	67.95%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Atmos Energy	ATO	63.00%	60.50%	58.00%	55.50%	53.00%	56.64%	60.27%	63.91%	67.55%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Laclede Group	LG	70.00%	66.75%	63.50%	60.25%	57.00%	59.84%	62.67%	65.51%	68.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
New Jersey Resources	NJR	53.00%	52.75%	52.50%	52.25%	52.00%	55.84%	59.67%	63.51%	67.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Nicor Inc.	GAS	68.00%	66.25%	64.50%	62.75%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Northwest Nat. Gas	NWN	61.00%	59.25%	57.50%	55.75%	54.00%	57.44%	60.87%	64.31%	67.75%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Piedmont Natural Gas	PNY	71.00%	70.00%	69.00%	68.00%	67.00%	67.84%	68.67%	69.51%	70.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
South Jersey Industries	SJI	51.00%	50.00%	49.00%	48.00%	47.00%	51.84%	56.67%	61.51%	66.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
WGL Holdings Inc.	WGL	65.00%	64.00%	63.00%	62.00%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%

Projected Annual Data

Dividends per Share & Terminal Market Value		[45]	[46]	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]
Company	Ticker	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Terminal Price	Terminal P/E Ratio
AGL Resources	AGL	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 4.50	$ 94.77	15.00
Atmos Energy	ATO	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 3.02	$ 55.07	13.00
Laclede Group	LG	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 3.97	$ 89.24	16.00
New Jersey Resources	NJR	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 3.54	$ 69.54	14.00
Nicor Inc.	GAS	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 3.68	$ 82.82	16.00
Northwest Nat. Gas	NWN	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 4.29	$ 102.47	17.00
Piedmont Natural Gas	PNY	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 2.44	$ 61.62	18.00
South Jersey Industries	SJI	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 4.19	$ 82.38	14.00
WGL Holdings Inc.	WGL	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 3.41	$ 71.79	15.00
																		15.33

Projected Annual Data

Investor Cash Flows		[62]	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]
Company	Ticker	Initial Outflow	10/8/10	12/31/10	7/1/11	7/1/12	7/1/13	7/1/14	7/1/15	7/1/16	7/1/17	7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24
AGL Resources	AGL	($37.64)	$0.00	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 99.27
Atmos Energy	ATO	($28.55)	$0.00	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 58.08
Laclede Group	LG	($33.93)	$0.00	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 93.21
New Jersey Resources	NJR	($37.17)	$0.00	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 73.07
Nicor Inc.	GAS	($43.30)	$0.00	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 86.50
Northwest Nat. Gas	NWN	($45.92)	$0.00	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 106.76
Piedmont Natural Gas	PNY	($27.06)	$0.00	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 64.05
South Jersey Industries	SJI	($46.27)	$0.00	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 86.67
WGL Holdings Inc.	WGL	($35.77)	$0.00	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 75.20

MULTI-STAGE DCF MODEL – 180-DAY AVERAGE PRICE
TERMINAL VALUE - LONG-TERM PROJECTED PRICE-TO-EARNINGS RATIO

Inputs

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Stock	EPS	GDP		Payout Ratio		Solver Cells			Near Term	ntermediat	Long Term
Company	Ticker	Price	Growth	Growth	2010	2014	2024	Delta	k(e)	Solution	Growth	Growth	Growth
AGL Resources	AGL	$ 37.49	4.92%	5.83%	58.00%	55.00%	71.18%	$ 0.00	12.18%	12.18%	4.92%	5.38%	5.83%
Atmos Energy	ATO	$ 28.43	4.64%	5.83%	63.00%	53.00%	71.18%	$ 0.00	10.08%	10.08%	4.64%	5.24%	5.83%
Laclede Group	LG	$ 33.78	3.00%	5.83%	70.00%	57.00%	71.18%	$ 0.00	12.75%	12.75%	3.00%	4.41%	5.83%
New Jersey Resources	NJR	$ 37.05	4.11%	5.83%	53.00%	52.00%	71.18%	$ 0.00	9.29%	9.29%	4.11%	4.97%	5.83%
Nicor Inc.	GAS	$ 42.57	1.74%	5.83%	68.00%	61.00%	71.18%	$ (0.00)	9.62%	9.62%	1.74%	3.78%	5.83%
Northwest Nat. Gas	NWN	$ 45.77	4.51%	5.83%	61.00%	54.00%	71.18%	$ 0.00	10.34%	10.34%	4.51%	5.17%	5.83%
Piedmont Natural Gas	PNY	$ 26.83	3.98%	5.83%	71.00%	67.00%	71.18%	$ 0.00	10.82%	10.82%	3.98%	4.90%	5.83%
South Jersey Industries	SJI	$ 44.03	6.61%	5.83%	51.00%	47.00%	71.18%	$ (0.00)	8.96%	8.96%	6.61%	6.22%	5.83%
WGL Holdings Inc.	WGL	$ 34.92	2.87%	5.83%	65.00%	61.00%	71.18%	$ (0.00)	10.39%	10.39%	2.87%	4.35%	5.83%
MEAN:		$ 36.76	4.04%	5.83%	62.22%	56.33%	71.18%			10.49%	4.04%	4.94%	5.83%

Projected Annual Data
Earnings per Share

		[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]
Company	Ticker	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Terminal Growth
AGL Resources	AGL	$ 2.88	$ 3.02	$ 3.17	$ 3.33	$ 3.49	$ 3.66	$ 3.85	$ 4.05	$ 4.27	$ 4.50	$ 4.76	$ 5.04	$ 5.33	$ 5.64	$ 5.97	$ 6.32	5.83%
Atmos Energy	ATO	$ 1.97	$ 2.06	$ 2.16	$ 2.26	$ 2.36	$ 2.47	$ 2.59	$ 2.72	$ 2.86	$ 3.02	$ 3.19	$ 3.38	$ 3.57	$ 3.78	$ 4.00	$ 4.24	5.83%
Laclede Group	LG	$ 2.92	$ 3.01	$ 3.10	$ 3.19	$ 3.29	$ 3.39	$ 3.50	$ 3.64	$ 3.80	$ 3.99	$ 4.20	$ 4.45	$ 4.71	$ 4.98	$ 5.27	$ 5.58	5.83%
New Jersey Resources	NJR	$ 2.40	$ 2.50	$ 2.60	$ 2.71	$ 2.82	$ 2.94	$ 3.06	$ 3.21	$ 3.37	$ 3.54	$ 3.74	$ 3.96	$ 4.19	$ 4.43	$ 4.69	$ 4.97	5.83%
Nicor Inc.	GAS	$ 2.97	$ 3.02	$ 3.07	$ 3.13	$ 3.18	$ 3.24	$ 3.32	$ 3.42	$ 3.55	$ 3.71	$ 3.90	$ 4.13	$ 4.37	$ 4.62	$ 4.89	$ 5.18	5.83%
Northwest Nat. Gas	NWN	$ 2.83	$ 2.96	$ 3.09	$ 3.23	$ 3.38	$ 3.53	$ 3.70	$ 3.88	$ 4.08	$ 4.30	$ 4.54	$ 4.80	$ 5.08	$ 5.38	$ 5.70	$ 6.03	5.83%
Piedmont Natural Gas	PNY	$ 1.67	$ 1.74	$ 1.81	$ 1.88	$ 1.95	$ 2.03	$ 2.12	$ 2.21	$ 2.32	$ 2.44	$ 2.58	$ 2.73	$ 2.89	$ 3.06	$ 3.23	$ 3.42	5.83%
South Jersey Industries	SJI	$ 2.38	$ 2.54	$ 2.71	$ 2.88	$ 3.07	$ 3.28	$ 3.49	$ 3.71	$ 3.94	$ 4.18	$ 4.43	$ 4.69	$ 4.96	$ 5.25	$ 5.56	$ 5.88	5.83%
WGL Holdings Inc.	WGL	$ 2.53	$ 2.60	$ 2.68	$ 2.75	$ 2.83	$ 2.91	$ 3.01	$ 3.13	$ 3.26	$ 3.42	$ 3.60	$ 3.82	$ 4.04	$ 4.27	$ 4.52	$ 4.79	5.83%

Projected Annual Data
Dividend Payout Ratio

		[30]	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]
Company	Ticker	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AGL Resources	AGL	58.00%	57.25%	56.50%	55.75%	55.00%	58.24%	61.47%	64.71%	67.95%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Atmos Energy	ATO	63.00%	60.50%	58.00%	55.50%	53.00%	56.64%	60.27%	63.91%	67.55%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Laclede Group	LG	70.00%	66.75%	63.50%	60.25%	57.00%	59.84%	62.67%	65.51%	68.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
New Jersey Resources	NJR	53.00%	52.75%	52.50%	52.25%	52.00%	55.84%	59.67%	63.51%	67.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Nicor Inc.	GAS	68.00%	66.25%	64.50%	62.75%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Northwest Nat. Gas	NWN	61.00%	59.25%	57.50%	55.75%	54.00%	57.44%	60.87%	64.31%	67.75%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
Piedmont Natural Gas	PNY	71.00%	70.00%	69.00%	68.00%	67.00%	67.84%	68.67%	69.51%	70.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
South Jersey Industries	SJI	51.00%	50.00%	49.00%	48.00%	47.00%	51.84%	56.67%	61.51%	66.35%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%
WGL Holdings Inc.	WGL	65.00%	64.00%	63.00%	62.00%	61.00%	63.04%	65.07%	67.11%	69.15%	71.18%	71.18%	71.18%	71.18%	71.18%	71.18%

Projected Annual Data
Dividends per Share & Terminal Market Value

		[45]	[46]	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]
Company	Ticker	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Terminal Price	Terminal P/E Ratio
AGL Resources	AGL	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 4.50	$ 94.77	15.00
Atmos Energy	ATO	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 3.02	$ 55.07	13.00
Laclede Group	LG	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 3.97	$ 89.24	16.00
New Jersey Resources	NJR	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 3.54	$ 69.54	14.00
Nicor Inc.	GAS	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 3.68	$ 82.82	16.00
Northwest Nat. Gas	NWN	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 4.29	$ 102.47	17.00
Piedmont Natural Gas	PNY	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 2.44	$ 61.62	18.00
South Jersey Industries	SJI	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 4.19	$ 82.38	14.00
WGL Holdings Inc.	WGL	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 3.41	$ 71.79	15.00
																		15.33

Projected Annual Data
Investor Cash Flows

		[62]	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]
Company	Ticker	Initial Outflow	10/8/10	12/31/10	7/1/11	7/1/12	7/1/13	7/1/14	7/1/15	7/1/16	7/1/17	7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24
AGL Resources	AGL	($37.49)	$0.00	$ 0.44	$ 1.82	$ 1.88	$ 1.95	$ 2.01	$ 2.24	$ 2.49	$ 2.76	$ 3.06	$ 3.39	$ 3.58	$ 3.79	$ 4.02	$ 4.25	$ 99.27
Atmos Energy	ATO	($28.43)	$0.00	$ 0.32	$ 1.31	$ 1.31	$ 1.31	$ 1.31	$ 1.47	$ 1.64	$ 1.83	$ 2.04	$ 2.27	$ 2.40	$ 2.54	$ 2.69	$ 2.85	$ 58.08
Laclede Group	LG	($33.78)	$0.00	$ 0.53	$ 2.07	$ 2.03	$ 1.98	$ 1.93	$ 2.10	$ 2.28	$ 2.49	$ 2.73	$ 2.99	$ 3.16	$ 3.35	$ 3.54	$ 3.75	$ 93.21
New Jersey Resources	NJR	($37.05)	$0.00	$ 0.33	$ 1.37	$ 1.42	$ 1.47	$ 1.53	$ 1.71	$ 1.91	$ 2.14	$ 2.39	$ 2.66	$ 2.82	$ 2.98	$ 3.16	$ 3.34	$ 73.07
Nicor Inc.	GAS	($42.57)	$0.00	$ 0.51	$ 2.04	$ 2.02	$ 2.00	$ 1.98	$ 2.09	$ 2.23	$ 2.38	$ 2.56	$ 2.78	$ 2.94	$ 3.11	$ 3.29	$ 3.48	$ 86.50
Northwest Nat. Gas	NWN	($45.77)	$0.00	$ 0.45	$ 1.83	$ 1.86	$ 1.88	$ 1.91	$ 2.12	$ 2.36	$ 2.62	$ 2.91	$ 3.23	$ 3.42	$ 3.62	$ 3.83	$ 4.05	$ 106.76
Piedmont Natural Gas	PNY	($26.83)	$0.00	$ 0.31	$ 1.26	$ 1.30	$ 1.33	$ 1.36	$ 1.44	$ 1.52	$ 1.61	$ 1.72	$ 1.84	$ 1.94	$ 2.06	$ 2.18	$ 2.30	$ 64.05
South Jersey Industries	SJI	($44.03)	$0.00	$ 0.32	$ 1.35	$ 1.41	$ 1.48	$ 1.54	$ 1.81	$ 2.10	$ 2.43	$ 2.78	$ 3.15	$ 3.34	$ 3.53	$ 3.74	$ 3.96	$ 86.57
WGL Holdings Inc.	WGL	($34.92)	$0.00	$ 0.42	$ 1.71	$ 1.73	$ 1.76	$ 1.78	$ 1.90	$ 2.04	$ 2.19	$ 2.37	$ 2.57	$ 2.72	$ 2.87	$ 3.04	$ 3.22	$ 75.20

CAPM UTILIZING ALTERNATIVE MARKET RISK PREMIUM CALCULATIONS

[1] Near Term Projected 30 Year Treasury		4.22%	
Current 30 Year Treasury (30-day average)			3.75%
Sharpe Ratio Derived Market Risk Premium	9.94%	12.93%	12.45%
Ex-Ante Approach Derived Market Risk Premium	9.42%	12.47%	11.99%
Proxy Group Current Beta	0.88		

[1] Source: Aspen Publishers, Blue Chip Financial Forecasts, Vol. 29, No. 9 September 1, 2010, p. 2

MARKET RISK PREMIUM UTILIZING EXPECTED MARKET SHARPE RATIO

RP_h	Vol_h		
6.70%	20.40%		
VOL_e		Expected Market Sharpe Ratio	RP_e
30.26%		32.85%	9.94%

$$\frac{RP_h}{Vol_h} \times Vol_e = RP_e$$

RP_h = historical arithmetic average Risk Premium
Vol_h = historical market volatility
Vol_e = expected market volatility

Date	VXV	02/11 VIX Futures	03/11 VIX Futures	04/11 VIX Futures
10/8/2010	24.06	30.50	31.40	31.45
10/7/2010	24.89	30.75	31.65	31.70
10/6/2010	24.91	30.75	31.70	31.75
10/5/2010	25.08	30.70	31.65	31.80
10/4/2010	26.32	31.40	32.25	32.40
10/1/2010	25.70	31.05	32.00	32.25
9/30/2010	26.40	31.35	32.25	32.50
9/29/2010	25.91	30.95	31.75	32.05
9/28/2010	25.34	30.65	31.45	31.65
9/27/2010	25.20	30.65	31.55	31.65
9/24/2010	24.75	30.60	31.55	31.60
9/23/2010	26.16	31.15	32.10	32.10
9/22/2010	25.16	30.55	31.65	31.70
9/21/2010	24.94	30.30	31.40	31.50
9/20/2010	24.59	30.30	31.35	31.50
9/17/2010	25.12	30.70	31.55	31.65
9/16/2010	24.96	30.55	31.40	31.50
9/15/2010	24.93	30.55	31.30	31.45
9/14/2010	24.74	30.70	31.35	31.45
9/13/2010	24.75	30.85	31.45	31.45
9/10/2010	25.59	31.40	32.05	31.85
9/9/2010	26.10	31.55	32.05	31.90
9/8/2010	26.30	31.80	32.30	32.15
9/7/2010	26.77	32.20	32.55	32.25
9/3/2010	25.31	31.85	32.15	32.05
9/2/2010	26.62	32.40	32.70	32.50
9/1/2010	27.29	32.55	32.90	32.80
8/31/2010	29.04	33.20	33.45	33.30
8/30/2010	30.01	33.15	33.25	33.10
8/27/2010	28.40	32.40	32.65	32.60
Average	30.26			

ESTIMATED MARKET RISK PREMIUM DERIVED FROM

Estimated Weighted Index Dividend Yield	Weighted Index Long-Term Growth Rate	S&P 500 Estimated Required Market Return
1.88%	11.17%	13.16%

Percent of Index Capitalization Represented by Estimate:	97.22%

30 Day Average 30-Year Treasury Yield	3.75%
Implied Market Risk Premium	9.42%

Standard and Poor's 500 Index

Ticker	Name	Weight in the Index (%)	Long-Term Growth Estimate (%)	Cap-Weighted Long-Term Growth	Estimated 2009 Dividend Yield (%)	Cap-Weighted Dividend Yield
MMM UN Equity	3M CO	0.58%	12.13%	0.07%	2.37%	0.01%
ABT UN Equity	ABBOTT LABORATORIES	0.75%	10.58%	0.08%	3.29%	0.02%
ANF UN Equity	ABERCROMBIE & FITCH CO-CL A	0.04%	17.92%	0.01%	1.56%	0.00%
ACE UN Equity	ACE LTD	0.19%	11.40%	0.02%	2.13%	0.00%
ADBE UW Equity	ADOBE SYSTEMS INC	0.13%	14.42%	0.02%	0.00%	0.00%
AMD UN Equity	ADVANCED MICRO DEVICES	0.05%	13.75%	0.01%	0.00%	0.00%
AES UN Equity	AES CORP	0.09%	9.50%	0.01%	0.00%	0.00%
AET UN Equity	AETNA INC	0.12%	11.75%	0.01%	0.05%	0.00%
AFL UN Equity	AFLAC INC	0.24%	11.68%	0.03%	2.05%	0.00%
A UN Equity	AGILENT TECHNOLOGIES INC	0.11%	32.70%	0.04%	0.00%	0.00%
APD UN Equity	AIR PRODUCTS & CHEMICALS INC	0.16%	10.18%	0.02%	2.46%	0.00%
ARG UN Equity	AIRGAS INC	0.05%	13.52%	0.01%	1.30%	0.00%
AKS UN Equity	AK STEEL HOLDING CORP	0.01%	No Long-Term Growth		1.37%	0.00%
AKAM UW Equity	AKAMAI TECHNOLOGIES INC	0.08%	14.78%	0.01%	0.00%	0.00%
AA UN Equity	ALCOA INC	0.12%	3.00%	0.00%	0.90%	0.00%
AYE UN Equity	ALLEGHENY ENERGY INC	0.04%	No Long-Term Growth		2.52%	0.00%
ATI UN Equity	ALLEGHENY TECHNOLOGIES INC	0.04%	No Long-Term Growth		1.47%	0.00%
AGN UN Equity	ALLERGAN INC	0.19%	13.79%	0.03%	0.29%	0.00%
ALL UN Equity	ALLSTATE CORP	0.16%	8.20%	0.01%	2.42%	0.00%
ALTR UW Equity	ALTERA CORPORATION	0.08%	21.50%	0.02%	0.74%	0.00%
MO UN Equity	ALTRIA GROUP INC	0.47%	7.50%	0.04%	5.98%	0.03%
AMZN UW Equity	AMAZON.COM INC	0.64%	25.24%	0.16%	0.00%	0.00%
AEE UN Equity	AMEREN CORPORATION	0.06%	No Long-Term Growth		5.32%	0.00%
AEP UN Equity	AMERICAN ELECTRIC POWER	0.16%	4.00%	0.01%	4.70%	0.01%
AXP UN Equity	AMERICAN EXPRESS CO	0.43%	10.83%	0.05%	1.82%	0.01%
AIG UN Equity	AMERICAN INTERNATIONAL GROUP	0.27%	6.00%	0.02%	0.00%	0.00%
AMT UN Equity	AMERICAN TOWER CORP-CL A	0.19%	20.27%	0.04%	0.00%	0.00%
AMP UN Equity	AMERIPRISE FINANCIAL INC	0.12%	16.05%	0.02%	1.39%	0.00%
ABC UN Equity	AMERISOURCEBERGEN CORP	0.08%	12.83%	0.01%	0.94%	0.00%
AMGN UW Equity	AMGEN INC	0.49%	8.80%	0.04%	0.00%	0.00%
APH UN Equity	AMPHENOL CORP-CL A	0.08%	15.00%	0.01%	0.12%	0.00%
APC UN Equity	ANADARKO PETROLEUM CORP	0.26%	13.51%	0.04%	0.63%	0.00%
ADI UN Equity	ANALOG DEVICES INC	0.09%	11.50%	0.01%	2.65%	0.00%
AON UN Equity	AON CORP	0.11%	6.50%	0.01%	1.56%	0.00%
APA UN Equity	APACHE CORP	0.34%	9.31%	0.03%	0.59%	0.00%
AIV UN Equity	APARTMENT INVT & MGMT CO -A	0.02%	5.45%	0.00%	1.73%	0.00%
APOL UW Equity	APOLLO GROUP INC-CL A	0.07%	12.04%	0.01%	0.00%	0.00%
AAPL UW Equity	APPLE INC	2.51%	19.35%	0.49%	0.00%	0.00%
AMAT UW Equity	APPLIED MATERIALS INC	0.15%	13.33%	0.02%	2.21%	0.00%
ADM UN Equity	ARCHER-DANIELS-MIDLAND CO	0.19%	10.00%	0.02%	1.83%	0.00%
AIZ UN Equity	ASSURANT INC	0.04%	9.67%	0.00%	1.54%	0.00%
T UN Equity	AT&T INC	1.55%	6.04%	0.09%	5.88%	0.09%
ADSK UW Equity	AUTODESK INC	0.07%	14.66%	0.01%	0.00%	0.00%
ADP UW Equity	AUTOMATIC DATA PROCESSING	0.19%	9.86%	0.02%	3.32%	0.01%
AN UN Equity	AUTONATION INC	0.03%	15.82%	0.00%	0.00%	0.00%
AZO UN Equity	AUTOZONE INC	0.10%	14.01%	0.01%	0.00%	0.00%
AVB UN Equity	AVALONBAY COMMUNITIES INC	0.09%	7.20%	0.01%	3.21%	0.00%
AVY UN Equity	AVERY DENNISON CORP	0.04%	7.00%	0.00%	2.10%	0.00%
AVP UN Equity	AVON PRODUCTS INC	0.14%	11.67%	0.02%	2.52%	0.00%
BHI UN Equity	BAKER HUGHES INC	0.18%	5.23%	0.01%	1.29%	0.00%
BLL UN Equity	BALL CORP	0.05%	8.90%	0.00%	0.65%	0.00%
BK UN Equity	BANK OF NEW YORK MELLON CORP	0.30%	9.88%	0.03%	1.49%	0.00%
BAC UN Equity	BANK OF AMERICA CORP	1.23%	9.13%	0.11%	0.30%	0.00%
BAX UN Equity	BAXTER INTERNATIONAL INC	0.27%	10.50%	0.03%	2.36%	0.01%
BBT UN Equity	BB&T CORP	0.15%	7.00%	0.01%	2.56%	0.00%
BDX UN Equity	BECTON DICKINSON AND CO	0.16%	10.07%	0.02%	2.07%	0.00%
BBBY UW Equity	BED BATH & BEYOND INC	0.10%	14.66%	0.02%	0.00%	0.00%
BMS UN Equity	BEMIS COMPANY	0.03%	11.17%	0.00%	2.71%	0.00%
BRK/B UN Equity	BERKSHIRE HATHAWAY INC-CL B	0.77%	No Long-Term Growth		0.00%	0.00%
BBY UN Equity	BEST BUY CO INC	0.15%	12.29%	0.02%	1.39%	0.00%
BIG UN Equity	BIG LOTS INC	0.02%	14.00%	0.00%	0.00%	0.00%
BIIB UW Equity	BIOGEN IDEC INC	0.13%	7.96%	0.01%	0.00%	0.00%
BMC UW Equity	BMC SOFTWARE INC	0.07%	13.65%	0.01%	0.00%	0.00%
BA UN Equity	BOEING CO/THE	0.48%	16.96%	0.08%	2.40%	0.01%
BXP UN Equity	BOSTON PROPERTIES INC	0.11%	5.40%	0.01%	2.31%	0.00%
BSX UN Equity	BOSTON SCIENTIFIC CORP	0.09%	9.43%	0.01%	0.00%	0.00%
BMY UN Equity	BRISTOL-MYERS SQUIBB CO	0.43%	4.52%	0.02%	4.67%	0.02%
BRCM UW Equity	BROADCOM CORP-CL A	0.15%	18.33%	0.03%	0.85%	0.00%
BF/B UN Equity	BROWN-FORMAN CORP-CLASS B	0.05%	13.00%	0.01%	2.00%	0.00%
CA UW Equity	CA INC	0.10%	11.00%	0.01%	0.73%	0.00%
COG UN Equity	CABOT OIL & GAS CORP	0.03%	No Long-Term Growth		0.33%	0.00%
CAM UN Equity	CAMERON INTERNATIONAL CORP	0.10%	No Long-Term Growth		0.00%	0.00%

CPB UN Equity	CAMPBELL SOUP CO	0.11%	7.73%	0.01%	3.12%	0.00%
COF UN Equity	CAPITAL ONE FINANCIAL CORP	0.17%	9.92%	0.02%	0.49%	0.00%
CAH UN Equity	CARDINAL HEALTH INC	0.11%	11.11%	0.01%	2.34%	0.00%
CFN UN Equity	CAREFUSION CORP	0.05%	8.94%	0.00%	0.00%	0.00%
KMX UN Equity	CARMAX INC	0.06%	13.02%	0.01%	0.00%	0.00%
CCL UN Equity	CARNIVAL CORP	0.22%	14.75%	0.03%	0.95%	0.00%
CAT UN Equity	CATERPILLAR INC	0.46%	12.20%	0.06%	2.15%	0.01%
CBG UN Equity	CB RICHARD ELLIS GROUP INC-A	0.06%	11.00%	0.01%	0.00%	0.00%
CBS UN Equity	CBS CORP-CLASS B NON VOTING	0.10%	6.52%	0.01%	1.12%	0.00%
CELG UW Equity	CELGENE CORP	0.25%	23.61%	0.06%	0.00%	0.00%
CNP UN Equity	CENTERPOINT ENERGY INC	0.06%	6.28%	0.00%	4.89%	0.00%
CTL UN Equity	CENTURYLINK INC	0.11%	0.53%	0.00%	7.23%	0.01%
CEPH UW Equity	CEPHALON INC	0.04%	12.38%	0.01%	0.00%	0.00%
CERN UW Equity	CERNER CORP	0.07%	18.33%	0.01%	0.00%	0.00%
CF UN Equity	CF INDUSTRIES HOLDINGS INC	0.08%	5.00%	0.00%	0.34%	0.00%
CHRW UW Equity	C.H. ROBINSON WORLDWIDE INC	0.11%	16.00%	0.02%	1.42%	0.00%
CHK UN Equity	CHESAPEAKE ENERGY CORP	0.14%	8.75%	0.01%	1.32%	0.00%
CVX UN Equity	CHEVRON CORP	1.53%	18.99%	0.29%	3.42%	0.05%
CB UN Equity	CHUBB CORP	0.17%	8.33%	0.01%	2.58%	0.00%
CI UN Equity	CIGNA CORP	0.09%	10.19%	0.01%	0.07%	0.00%
CINF UW Equity	CINCINNATI FINANCIAL CORP	0.04%	No Long-Term Growth		5.31%	0.00%
CTAS UW Equity	CINTAS CORP	0.04%	10.20%	0.00%	1.81%	0.00%
CSCO UW Equity	CISCO SYSTEMS INC	1.19%	11.58%	0.14%	0.00%	0.00%
C UN Equity	CITIGROUP INC	1.13%	1.50%	0.02%	0.00%	0.00%
CTXS UW Equity	CITRIX SYSTEMS INC	0.10%	12.55%	0.01%	0.00%	0.00%
CLF UN Equity	CLIFFS NATURAL RESOURCES INC	0.09%	No Long-Term Growth		0.67%	0.00%
CLX UN Equity	CLOROX COMPANY	0.09%	9.90%	0.01%	3.20%	0.00%
CME UW Equity	CME GROUP INC	0.16%	13.67%	0.02%	1.80%	0.00%
CMS UN Equity	CMS ENERGY CORP	0.04%	7.40%	0.00%	3.63%	0.00%
COH UN Equity	COACH INC	0.12%	14.71%	0.02%	1.31%	0.00%
KO UN Equity	COCA-COLA CO/THE	1.26%	8.50%	0.11%	2.94%	0.04%
CCE UN Equity	COCA-COLA ENTERPRISES	0.07%	10.00%	0.01%	5.98%	0.00%
CTSH UW Equity	COGNIZANT TECH SOLUTIONS-A	0.18%	19.29%	0.04%	0.00%	0.00%
CL UN Equity	COLGATE-PALMOLIVE CO	0.34%	9.80%	0.03%	2.63%	0.01%
CMCSA UW Equity	COMCAST CORP-CLASS A	0.34%	16.33%	0.06%	2.02%	0.01%
CMA UN Equity	COMERICA INC	0.06%	6.07%	0.00%	0.51%	0.00%
CSC UN Equity	COMPUTER SCIENCES CORP	0.07%	9.00%	0.01%	0.55%	0.00%
CPWR UW Equity	COMPUWARE CORP	0.02%	5.00%	0.00%	0.00%	0.00%
CAG UN Equity	CONAGRA FOODS INC	0.09%	7.90%	0.01%	3.97%	0.00%
COP UN Equity	CONOCOPHILLIPS	0.81%	18.85%	0.15%	3.56%	0.03%
ED UN Equity	CONSOLIDATED EDISON INC	0.13%	4.36%	0.01%	4.91%	0.01%
CNX UN Equity	CONSOL ENERGY INC	0.08%	46.00%	0.04%	1.00%	0.00%
CEG UN Equity	CONSTELLATION ENERGY GROUP	0.06%	No Long-Term Growth		2.91%	0.00%
STZ UN Equity	CONSTELLATION BRANDS INC-A	0.03%	7.00%	0.00%	0.00%	0.00%
GLW UN Equity	CORNING INC	0.27%	11.40%	0.03%	1.08%	0.00%
COST UW Equity	COSTCO WHOLESALE CORP	0.25%	13.05%	0.03%	1.46%	0.00%
CVH UN Equity	COVENTRY HEALTH CARE INC	0.03%	9.67%	0.00%	0.00%	0.00%
BCR UN Equity	CR BARD INC	0.07%	12.00%	0.01%	0.84%	0.00%
CSX UN Equity	CSX CORP	0.21%	11.61%	0.02%	1.64%	0.00%
CMI UN Equity	CUMMINS INC	0.17%	11.50%	0.02%	0.88%	0.00%
CVS UN Equity	CVS CAREMARK CORP	0.39%	11.88%	0.05%	1.09%	0.00%
DHR UN Equity	DANAHER CORP	0.25%	14.75%	0.04%	0.18%	0.00%
DRI UN Equity	DARDEN RESTAURANTS INC	0.05%	12.50%	0.01%	3.01%	0.00%
DVA UN Equity	DAVITA INC	0.07%	12.39%	0.01%	0.00%	0.00%
DF UN Equity	DEAN FOODS CO	0.02%	8.25%	0.00%	0.00%	0.00%
DE UN Equity	DEERE & CO	0.29%	8.75%	0.03%	1.52%	0.00%
DELL UW Equity	DELL INC	0.25%	7.83%	0.02%	0.00%	0.00%
DNR UN Equity	DENBURY RESOURCES INC	0.07%	6.50%	0.00%	0.00%	0.00%
XRAY UW Equity	DENTSPLY INTERNATIONAL INC	0.04%	11.75%	0.00%	0.66%	0.00%
DVN UN Equity	DEVON ENERGY CORPORATION	0.27%	6.39%	0.02%	0.96%	0.00%
DV UN Equity	DEVRY INC	0.03%	16.60%	0.01%	0.42%	0.00%
DO UN Equity	DIAMOND OFFSHORE DRILLING	0.09%	18.00%	0.02%	6.96%	0.01%
DTV UW Equity	DIRECTV-CLASS A	0.33%	25.41%	0.09%	0.00%	0.00%
DFS UN Equity	DISCOVER FINANCIAL SERVICES	0.09%	6.00%	0.01%	0.45%	0.00%
DISCA UW Equity	DISCOVERY COMMUNICATIONS-A	0.06%	22.26%	0.01%	0.00%	0.00%
D UN Equity	DOMINION RESOURCES INC/VA	0.24%	5.00%	0.01%	4.12%	0.01%
DOV UN Equity	DOVER CORP	0.09%	12.00%	0.01%	1.95%	0.00%
DOW UN Equity	DOW CHEMICAL	0.32%	7.50%	0.02%	2.05%	0.01%
DHI UN Equity	DR HORTON INC	0.03%	7.67%	0.00%	1.39%	0.00%
DPS UN Equity	DR PEPPER SNAPPLE GROUP INC	0.08%	9.00%	0.01%	2.41%	0.00%
DTE UN Equity	DTE ENERGY COMPANY	0.07%	4.80%	0.00%	4.59%	0.00%
DD UN Equity	DU PONT (E.I.) DE NEMOURS	0.39%	13.56%	0.05%	3.51%	0.01%
DUK UN Equity	DUKE ENERGY CORP	0.21%	3.83%	0.01%	5.52%	0.01%
DNB UN Equity	DUN & BRADSTREET CORP	0.03%	10.00%	0.00%	1.86%	0.00%
ETFC UW Equity	E*TRADE FINANCIAL CORP	0.03%	90.00%	0.03%	0.00%	0.00%
EMN UN Equity	EASTMAN CHEMICAL COMPANY	0.05%	7.00%	0.00%	2.24%	0.00%
EK UN Equity	EASTMAN KODAK CO	0.01%	10.00%	0.00%	0.00%	0.00%
ETN UN Equity	EATON CORP	0.13%	10.25%	0.01%	2.57%	0.00%
EBAY UW Equity	EBAY INC	0.30%	8.77%	0.03%	0.00%	0.00%
ECL UN Equity	ECOLAB INC	0.11%	14.00%	0.02%	1.19%	0.00%
EIX UN Equity	EDISON INTERNATIONAL	0.11%	0.60%	0.00%	3.59%	0.00%
EP UN Equity	EL PASO CORP	0.09%	11.50%	0.01%	0.30%	0.00%
ERTS UW Equity	ELECTRONIC ARTS INC	0.05%	15.71%	0.01%	0.00%	0.00%
LLY UN Equity	ELI LILLY & CO	0.39%	No Long-Term Growth		5.21%	0.00%
EMC UN Equity	EMC CORP/MASS	0.38%	14.90%	0.06%	0.00%	0.00%
EMR UN Equity	EMERSON ELECTRIC CO	0.37%	11.19%	0.04%	2.71%	0.01%
ETR UN Equity	ENTERGY CORP	0.13%	2.75%	0.00%	4.19%	0.01%
EOG UN Equity	EOG RESOURCES INC	0.23%	16.00%	0.04%	0.63%	0.00%
EQT UN Equity	EQT CORP	0.05%	14.50%	0.01%	2.34%	0.00%
EFX UN Equity	EQUIFAX INC	0.04%	9.75%	0.00%	0.51%	0.00%
EQR UN Equity	EQUITY RESIDENTIAL	0.13%	6.22%	0.01%	2.71%	0.00%
EL UN Equity	ESTEE LAUDER COMPANIES-CL A	0.07%	13.77%	0.01%	0.94%	0.00%
EXC UN Equity	EXELON CORP	0.26%	No Long-Term Growth		4.90%	0.00%
EXPE UW Equity	EXPEDIA INC	0.07%	14.00%	0.01%	0.79%	0.00%
EXPD UW Equity	EXPEDITORS INTL WASH INC	0.09%	15.93%	0.01%	0.82%	0.00%
ESRX UW Equity	EXPRESS SCRIPTS INC	0.24%	18.23%	0.04%	0.00%	0.00%
XOM UN Equity	EXXON MOBIL CORP	3.02%	15.06%	0.46%	2.68%	0.08%
FDO UN Equity	FAMILY DOLLAR STORES	0.06%	13.86%	0.01%	1.44%	0.00%
FAST UW Equity	FASTENAL CO	0.07%	20.90%	0.01%	1.56%	0.00%

FII UN Equity	FEDERATED INVESTORS INC-CL B	0.02%	6.00%	0.00%	8.31%	0.00%
FDX UN Equity	FEDEX CORP	0.26%	13.93%	0.04%	0.54%	0.00%
FIS UN Equity	FIDELITY NATIONAL INFORMATIO	0.08%	13.22%	0.01%	0.72%	0.00%
FITB UW Equity	FIFTH THIRD BANCORP	0.09%	4.56%	0.00%	0.31%	0.00%
FHN UN Equity	FIRST HORIZON NATIONAL CORP	0.02%	8.00%	0.00%	0.00%	0.00%
FSLR UW Equity	FIRST SOLAR INC	0.11%	18.60%	0.02%	0.00%	0.00%
FE UN Equity	FIRSTENERGY CORP	0.11%	3.00%	0.00%	5.75%	0.01%
FISV UW Equity	FISERV INC	0.07%	12.42%	0.01%	0.00%	0.00%
FLIR UW Equity	FLIR SYSTEMS INC	0.04%	18.60%	0.01%	0.00%	0.00%
FLS UN Equity	FLOWSERVE CORP	0.06%	9.00%	0.01%	1.01%	0.00%
FLR UN Equity	FLUOR CORP	0.09%	14.33%	0.01%	0.99%	0.00%
FMC UN Equity	FMC CORP	0.05%	9.83%	0.00%	0.71%	0.00%
FTI UN Equity	FMC TECHNOLOGIES INC	0.08%	31.20%	0.02%	0.00%	0.00%
F UN Equity	FORD MOTOR CO	0.42%	10.84%	0.05%	0.00%	0.00%
FRX UN Equity	FOREST LABORATORIES INC	0.09%	No Long-Term Growth		0.00%	0.00%
FO UN Equity	FORTUNE BRANDS INC	0.08%	11.33%	0.01%	1.37%	0.00%
BEN UN Equity	FRANKLIN RESOURCES INC	0.24%	10.00%	0.02%	0.80%	0.00%
FCX UN Equity	FREEPORT-MCMORAN COPPER	0.42%	5.00%	0.02%	1.05%	0.00%
FTR UN Equity	FRONTIER COMMUNICATIONS CORP	0.08%	No Long-Term Growth		10.03%	0.00%
GME UN Equity	GAMESTOP CORP-CLASS A	0.03%	14.00%	0.00%	0.00%	0.00%
GCI UN Equity	GANNETT CO	0.03%	5.50%	0.00%	1.15%	0.00%
GPS UN Equity	GAP INC/THE	0.11%	10.46%	0.01%	2.13%	0.00%
GD UN Equity	GENERAL DYNAMICS CORP	0.22%	8.14%	0.02%	2.53%	0.01%
GE UN Equity	GENERAL ELECTRIC CO	1.69%	15.85%	0.27%	2.46%	0.04%
GIS UN Equity	GENERAL MILLS INC	0.22%	9.32%	0.02%	2.93%	0.01%
GPC UN Equity	GENUINE PARTS CO	0.07%	10.33%	0.01%	3.59%	0.00%
GNW UN Equity	GENWORTH FINANCIAL INC-CL A	0.06%	14.05%	0.01%	0.00%	0.00%
GENZ UW Equity	GENZYME CORP	0.17%	19.39%	0.03%	0.00%	0.00%
GILD UW Equity	GILEAD SCIENCES INC	0.28%	14.00%	0.04%	0.00%	0.00%
GS UN Equity	GOLDMAN SACHS GROUP INC	0.73%	7.41%	0.05%	0.91%	0.01%
GR UN Equity	GOODRICH CORP	0.09%	7.33%	0.01%	1.38%	0.00%
GT UN Equity	GOODYEAR TIRE & RUBBER CO	0.03%	21.60%	0.01%	0.00%	0.00%
GOOG UW Equity	GOOGLE INC-CL A	1.23%	17.70%	0.22%	0.00%	0.00%
HRB UN Equity	H&R BLOCK INC	0.04%	10.00%	0.00%	4.26%	0.00%
HAL UN Equity	HALLIBURTON CO	0.29%	10.10%	0.03%	1.02%	0.00%
HOG UN Equity	HARLEY-DAVIDSON INC	0.07%	9.33%	0.01%	1.24%	0.00%
HAR UN Equity	HARMAN INTERNATIONAL	0.02%	20.00%	0.00%	0.00%	0.00%
HRS UN Equity	HARRIS CORP	0.05%	5.50%	0.00%	1.32%	0.00%
HIG UN Equity	HARTFORD FINANCIAL SVCS GRP	0.10%	13.75%	0.01%	0.80%	0.00%
HAS UN Equity	HASBRO INC	0.06%	14.33%	0.01%	2.16%	0.00%
HCP UN Equity	HCP INC	0.10%	7.57%	0.01%	5.05%	0.01%
HCN UN Equity	HEALTH CARE REIT INC	0.06%	7.24%	0.00%	5.55%	0.00%
HP UN Equity	HELMERICH & PAYNE	0.04%	10.00%	0.00%	0.45%	0.00%
HSY UN Equity	HERSHEY CO/THE	0.08%	8.50%	0.01%	2.54%	0.00%
HES UN Equity	HESS CORP	0.19%	10.68%	0.02%	0.63%	0.00%
HPQ UN Equity	HEWLETT-PACKARD CO	0.87%	11.00%	0.10%	0.83%	0.01%
HNZ UN Equity	HJ HEINZ CO	0.14%	7.12%	0.01%	3.70%	0.01%
HD UN Equity	HOME DEPOT INC	0.48%	14.43%	0.07%	3.06%	0.01%
HON UN Equity	HONEYWELL INTERNATIONAL INC	0.33%	10.52%	0.03%	2.58%	0.01%
HRL UN Equity	HORMEL FOODS CORP	0.05%	11.00%	0.01%	1.88%	0.00%
HSP UN Equity	HOSPIRA INC	0.09%	12.80%	0.01%	0.00%	0.00%
HST UN Equity	HOST HOTELS & RESORTS INC	0.10%	11.60%	0.01%	0.28%	0.00%
HCBK UW Equity	HUDSON CITY BANCORP INC	0.06%	4.50%	0.00%	5.05%	0.00%
HUM UN Equity	HUMANA INC	0.08%	10.00%	0.01%	0.00%	0.00%
HBAN UW Equity	HUNTINGTON BANCSHARES INC	0.04%	4.67%	0.00%	0.67%	0.00%
IBM UN Equity	INTL BUSINESS MACHINES CORP	1.63%	10.54%	0.17%	1.65%	0.03%
ITW UN Equity	ILLINOIS TOOL WORKS	0.23%	15.06%	0.03%	2.65%	0.01%
TEG UN Equity	INTEGRYS ENERGY GROUP INC	0.04%	8.27%	0.00%	5.20%	0.00%
INTC UW Equity	INTEL CORP	1.00%	11.29%	0.11%	3.19%	0.03%
ICE UN Equity	INTERCONTINENTALEXCHANGE INC	0.08%	17.75%	0.01%	0.00%	0.00%
IPG UN Equity	INTERPUBLIC GROUP OF COS INC	0.05%	12.00%	0.01%	0.00%	0.00%
IFF UN Equity	INTL FLAVORS & FRAGRANCES	0.04%	9.00%	0.00%	2.08%	0.00%
IGT UN Equity	INTL GAME TECHNOLOGY	0.04%	13.80%	0.01%	1.62%	0.00%
IP UN Equity	INTERNATIONAL PAPER CO	0.09%	5.50%	0.01%	1.74%	0.00%
INTU UW Equity	INTUIT INC	0.14%	14.95%	0.02%	0.00%	0.00%
ISRG UW Equity	INTUITIVE SURGICAL INC	0.10%	26.40%	0.03%	0.00%	0.00%
IVZ UN Equity	INVESCO LTD	0.10%	9.65%	0.01%	1.88%	0.00%
IRM UN Equity	IRON MOUNTAIN INC	0.04%	18.00%	0.01%	1.04%	0.00%
ITT UN Equity	ITT CORP	0.08%	11.33%	0.01%	2.07%	0.00%
JCP UN Equity	J.C. PENNEY CO INC	0.07%	9.67%	0.01%	2.45%	0.00%
JBL UN Equity	JABIL CIRCUIT INC	0.03%	11.00%	0.00%	1.91%	0.00%
JEC UN Equity	JACOBS ENGINEERING GROUP INC	0.05%	11.00%	0.01%	0.00%	0.00%
JNS UN Equity	JANUS CAPITAL GROUP INC	0.02%	2.80%	0.00%	0.34%	0.00%
JDSU UW Equity	JDS UNIPHASE CORP	0.03%	12.25%	0.00%	0.00%	0.00%
SJM UN Equity	JM SMUCKER CO/THE	0.07%	7.03%	0.00%	2.57%	0.00%
JCI UN Equity	JOHNSON CONTROLS INC	0.20%	15.53%	0.03%	1.65%	0.00%
JNJ UN Equity	JOHNSON & JOHNSON	1.61%	6.63%	0.11%	3.29%	0.05%
JPM UN Equity	JPMORGAN CHASE & CO	1.45%	8.50%	0.12%	0.67%	0.01%
JNPR UN Equity	JUNIPER NETWORKS INC	0.15%	17.69%	0.03%	0.00%	0.00%
K UN Equity	KELLOGG CO	0.18%	9.17%	0.02%	3.05%	0.01%
KEY UN Equity	KEYCORP	0.07%	4.75%	0.00%	0.45%	0.00%
KMB UN Equity	KIMBERLY-CLARK CORP	0.25%	8.27%	0.02%	3.87%	0.01%
KIM UN Equity	KIMCO REALTY CORP	0.06%	9.50%	0.01%	3.76%	0.00%
KG UN Equity	KING PHARMACEUTICALS INC	0.03%	11.92%	0.00%	0.00%	0.00%
KLAC UW Equity	KLA-TENCOR CORPORATION	0.05%	10.50%	0.01%	2.88%	0.00%
KSS UN Equity	KOHLS CORP	0.15%	13.78%	0.02%	0.00%	0.00%
KFT UN Equity	KRAFT FOODS INC-CLASS A	0.50%	7.30%	0.04%	3.75%	0.02%
KR UN Equity	KROGER CO	0.13%	8.92%	0.01%	1.80%	0.00%
LLL UN Equity	L-3 COMMUNICATIONS HOLDINGS	0.07%	8.69%	0.01%	2.19%	0.00%
LH UN Equity	LABORATORY CRP OF AMER HLDGS	0.08%	12.50%	0.01%	0.00%	0.00%
LM UN Equity	LEGG MASON INC	0.04%	7.50%	0.00%	0.49%	0.00%
LEG UN Equity	LEGGETT & PLATT INC	0.03%	4.70%	0.00%	4.33%	0.00%
LEN UN Equity	LENNAR CORP-CL A	0.02%	8.00%	0.00%	1.00%	0.00%
LUK UN Equity	LEUCADIA NATIONAL CORP	0.06%	No Long-Term Growth		0.00%	0.00%
LXK UN Equity	LEXMARK INTERNATIONAL INC-A	0.03%	No Long-Term Growth		0.00%	0.00%
LIFE UW Equity	LIFE TECHNOLOGIES CORP	0.08%	10.18%	0.01%	0.00%	0.00%
LTD UN Equity	LIMITED BRANDS INC	0.09%	14.86%	0.01%	5.38%	0.00%
LNC UN Equity	LINCOLN NATIONAL CORP	0.07%	10.80%	0.01%	0.16%	0.00%
LLTC UW Equity	LINEAR TECHNOLOGY CORP	0.06%	9.67%	0.01%	3.16%	0.00%

LMT UN Equity	LOCKHEED MARTIN CORP	0.24%	8.07%	0.02%	3.67%	0.01%
L UN Equity	LOEWS CORP	0.15%	No Long-Term Growth		0.63%	0.00%
LO UN Equity	LORILLARD INC	0.11%	6.00%	0.01%	5.26%	0.01%
LOW UN Equity	LOWE'S COS INC	0.28%	14.24%	0.04%	1.76%	0.00%
LSI UN Equity	LSI CORP	0.03%	15.00%	0.00%	0.00%	0.00%
MTB UN Equity	M & T BANK CORP	0.08%	4.95%	0.00%	3.61%	0.00%
M UN Equity	MACY'S INC	0.09%	10.00%	0.01%	0.82%	0.00%
MRO UN Equity	MARATHON OIL CORP	0.23%	12.02%	0.03%	2.77%	0.01%
MAR UN Equity	MARRIOTT INTERNATIONAL-CL A	0.12%	10.53%	0.01%	0.44%	0.00%
MMC UN Equity	MARSH & MCLENNAN COS	0.12%	11.00%	0.01%	3.44%	0.00%
MI UN Equity	MARSHALL & ILSLEY CORP	0.04%	6.33%	0.00%	0.49%	0.00%
MAS UN Equity	MASCO CORP	0.04%	10.00%	0.00%	2.41%	0.00%
MEE UN Equity	MASSEY ENERGY CO	0.03%	112.00%	0.04%	0.71%	0.00%
MA UN Equity	MASTERCARD INC-CLASS A	0.24%	19.47%	0.05%	0.27%	0.00%
MAT UW Equity	MATTEL INC	0.08%	8.50%	0.01%	3.42%	0.00%
MFE UN Equity	MCAFEE INC	0.07%	13.13%	0.01%	0.00%	0.00%
MKC UN Equity	MCCORMICK & CO-NON VTG SHRS	0.05%	8.83%	0.00%	2.39%	0.00%
MCD UN Equity	MCDONALD'S CORP	0.74%	9.58%	0.07%	3.00%	0.02%
MHP UN Equity	MCGRAW-HILL COMPANIES INC	0.10%	9.00%	0.01%	2.98%	0.00%
MCK UN Equity	MCKESSON CORP	0.15%	11.00%	0.02%	0.92%	0.00%
MJN UN Equity	MEAD JOHNSON NUTRITION CO	0.11%	10.25%	0.01%	1.45%	0.00%
MWV UN Equity	MEADWESTVACO CORP	0.04%	10.00%	0.00%	3.67%	0.00%
MHS UN Equity	MEDCO HEALTH SOLUTIONS INC	0.21%	16.67%	0.03%	0.05%	0.00%
MDT UN Equity	MEDTRONIC INC	0.33%	10.04%	0.03%	2.69%	0.01%
WFR UN Equity	MEMC ELECTRONIC MATERIALS	0.03%	17.50%	0.00%	0.00%	0.00%
MRK UN Equity	MERCK & CO. INC.	1.05%	6.73%	0.07%	4.09%	0.04%
MDP UN Equity	MEREDITH CORP	0.01%	15.00%	0.00%	2.65%	0.00%
MET UN Equity	METLIFE INC	0.33%	10.58%	0.03%	1.91%	0.01%
PCS UN Equity	METROPCS COMMUNICATIONS INC	0.04%	20.82%	0.01%	0.00%	0.00%
MCHP UW Equity	MICROCHIP TECHNOLOGY INC	0.05%	15.00%	0.01%	4.43%	0.00%
MU UW Equity	MICRON TECHNOLOGY INC	0.07%	11.75%	0.01%	0.00%	0.00%
MSFT UW Equity	MICROSOFT CORP	1.98%	11.88%	0.24%	2.26%	0.04%
MOLX UW Equity	MOLEX INC	0.02%	11.67%	0.00%	2.90%	0.00%
TAP UN Equity	MOLSON COORS BREWING CO -B	0.07%	12.00%	0.01%	2.18%	0.00%
MON UN Equity	MONSANTO CO	0.27%	11.00%	0.03%	2.11%	0.01%
MWW UN Equity	MONSTER WORLDWIDE INC	0.02%	20.20%	0.00%	0.00%	0.00%
MCO UN Equity	MOODY'S CORP	0.06%	11.05%	0.01%	1.44%	0.00%
MS UN Equity	MORGAN STANLEY	0.33%	12.00%	0.04%	0.78%	0.00%
MOT UN Equity	MOTOROLA INC	0.17%	12.50%	0.02%	0.00%	0.00%
MUR UN Equity	MURPHY OIL CORP	0.11%	15.00%	0.02%	1.61%	0.00%
MYL UW Equity	MYLAN INC	0.05%	13.70%	0.01%	1.65%	0.00%
NBR UN Equity	NABORS INDUSTRIES LTD	0.05%	10.00%	0.01%	0.00%	0.00%
NDAQ UW Equity	NASDAQ OMX GROUP/THE	0.04%	12.25%	0.00%	0.00%	0.00%
NOV UN Equity	NATIONAL OILWELL VARCO INC	0.19%	No Long-Term Growth		0.81%	0.00%
NSM UN Equity	NATIONAL SEMICONDUCTOR CORP	0.03%	8.00%	0.00%	2.88%	0.00%
NTAP UW Equity	NETAPP INC	0.16%	17.50%	0.03%	0.00%	0.00%
NYT UN Equity	NEW YORK TIMES CO -CL A	0.01%	12.00%	0.00%	0.00%	0.00%
NWL UN Equity	NEWELL RUBBERMAID INC	0.05%	9.20%	0.00%	1.23%	0.00%
NEM UN Equity	NEWMONT MINING CORP	0.28%	24.43%	0.07%	0.85%	0.00%
NWSA UW Equity	NEWS CORP-CL A	0.24%	10.53%	0.02%	1.06%	0.00%
NEE UN Equity	NEXTERA ENERGY INC	0.21%	6.05%	0.01%	3.61%	0.01%
GAS UN Equity	NICOR INC	0.02%	3.13%	0.00%	3.89%	0.00%
NKE UN Equity	NIKE INC -CL B	0.29%	12.03%	0.03%	1.37%	0.00%
NI UN Equity	NISOURCE INC	0.05%	7.17%	0.00%	5.25%	0.00%
NBL UN Equity	NOBLE ENERGY INC	0.12%	7.00%	0.01%	0.94%	0.00%
JWN UN Equity	NORDSTROM INC	0.08%	12.19%	0.01%	1.88%	0.00%
NSC UN Equity	NORFOLK SOUTHERN CORP	0.21%	13.75%	0.03%	2.29%	0.00%
NU UN Equity	NORTHEAST UTILITIES	0.05%	7.17%	0.00%	3.36%	0.00%
NTRS UW Equity	NORTHERN TRUST CORP	0.11%	6.14%	0.01%	2.25%	0.00%
NOC UN Equity	NORTHROP GRUMMAN CORP	0.17%	10.89%	0.02%	2.89%	0.00%
NOVL UW Equity	NOVELL INC	0.02%	8.33%	0.00%	0.00%	0.00%
NVLS UW Equity	NOVELLUS SYSTEMS INC	0.02%	14.00%	0.00%	0.00%	0.00%
NRG UN Equity	NRG ENERGY INC	0.05%	3.50%	0.00%	0.00%	0.00%
NUE UN Equity	NUCOR CORP	0.12%	No Long-Term Growth		3.48%	0.00%
NVDA UW Equity	NVIDIA CORP	0.06%	13.00%	0.01%	0.00%	0.00%
NYX UN Equity	NYSE EURONEXT	0.07%	9.70%	0.01%	4.16%	0.00%
ORLY UW Equity	O'REILLY AUTOMOTIVE INC	0.07%	16.50%	0.01%	0.00%	0.00%
OXY UN Equity	OCCIDENTAL PETROLEUM CORP	0.63%	7.88%	0.05%	1.55%	0.01%
ODP UN Equity	OFFICE DEPOT INC	0.01%	10.67%	0.00%	0.00%	0.00%
OMC UN Equity	OMNICOM GROUP	0.11%	11.00%	0.01%	1.93%	0.00%
OKE UN Equity	ONEOK INC	0.05%	6.00%	0.00%	3.64%	0.00%
ORCL UW Equity	ORACLE CORP	1.31%	14.84%	0.19%	0.80%	0.01%
OI UN Equity	OWENS-ILLINOIS INC	0.04%	7.20%	0.00%	0.00%	0.00%
PCAR UW Equity	PACCAR INC	0.17%	11.80%	0.02%	0.72%	0.00%
PTV UN Equity	PACTIV CORPORATION	0.04%	6.55%	0.00%	0.00%	0.00%
PLL UN Equity	PALL CORP	0.05%	12.00%	0.01%	1.44%	0.00%
PH UN Equity	PARKER HANNIFIN CORP	0.11%	8.50%	0.01%	1.49%	0.00%
PDCO UW Equity	PATTERSON COS INC	0.03%	14.33%	0.00%	1.41%	0.00%
PAYX UW Equity	PAYCHEX INC	0.09%	11.00%	0.01%	4.53%	0.00%
BTU UN Equity	PEABODY ENERGY CORP	0.13%	34.00%	0.04%	0.54%	0.00%
PBCT UW Equity	PEOPLE'S UNITED FINANCIAL	0.05%	7.67%	0.00%	4.65%	0.00%
POM UN Equity	PEPCO HOLDINGS INC	0.04%	6.50%	0.00%	5.68%	0.00%
PEP UN Equity	PEPSICO INC	0.96%	10.50%	0.10%	2.86%	0.03%
PKI UN Equity	PERKINELMER INC	0.03%	13.65%	0.00%	1.19%	0.00%
PFE UN Equity	PFIZER INC	1.30%	3.10%	0.04%	4.06%	0.05%
PCG UN Equity	P G & E CORP	0.17%	7.03%	0.01%	3.86%	0.01%
PM UN Equity	PHILIP MORRIS INTERNATIONAL	0.96%	9.97%	0.10%	4.29%	0.04%
PNW UN Equity	PINNACLE WEST CAPITAL	0.04%	5.83%	0.00%	5.12%	0.00%
PXD UN Equity	PIONEER NATURAL RESOURCES CO	0.08%	10.67%	0.01%	0.19%	0.00%
PBI UN Equity	PITNEY BOWES INC	0.04%	No Long-Term Growth		6.60%	0.00%
PCL UN Equity	PLUM CREEK TIMBER CO	0.06%	3.50%	0.00%	4.51%	0.00%
PNC UN Equity	PNC FINANCIAL SERVICES GROUP	0.26%	4.88%	0.01%	0.75%	0.00%
RL UN Equity	POLO RALPH LAUREN CORP	0.06%	13.50%	0.01%	0.35%	0.00%
PPG UN Equity	PPG INDUSTRIES INC	0.11%	7.50%	0.01%	2.89%	0.00%
PPL UN Equity	PPL CORPORATION	0.12%	5.06%	0.01%	5.07%	0.01%
PX UN Equity	PRAXAIR INC	0.26%	11.00%	0.03%	1.96%	0.01%
PCP UN Equity	PRECISION CASTPARTS CORP	0.17%	9.65%	0.02%	0.10%	0.00%
PCLN UW Equity	PRICELINE.COM INC	0.15%	20.67%	0.03%	0.00%	0.00%
PFG UN Equity	PRINCIPAL FINANCIAL GROUP	0.08%	12.17%	0.01%	1.92%	0.00%

PG UN Equity	PROCTER & GAMBLE CO/THE	1.62%	9.30%	0.15%	3.13%	0.05%
PGN UN Equity	PROGRESS ENERGY INC	0.12%	3.76%	0.00%	5.62%	0.01%
PGR UN Equity	PROGRESSIVE CORP	0.13%	6.79%	0.01%	1.21%	0.00%
PLD UN Equity	PROLOGIS	0.06%	18.23%	0.01%	4.71%	0.00%
PRU UN Equity	PRUDENTIAL FINANCIAL INC	0.23%	12.18%	0.03%	1.44%	0.00%
PEG UN Equity	PUBLIC SERVICE ENTERPRISE GP	0.15%	1.25%	0.00%	4.12%	0.01%
PSA UN Equity	PUBLIC STORAGE	0.16%	3.54%	0.01%	3.02%	0.00%
PHM UN Equity	PULTE GROUP INC	0.03%	10.00%	0.00%	0.04%	0.00%
QEP UN Equity	QEP RESOURCES INC	0.05%	15.00%	0.01%	0.15%	0.00%
QLGC UW Equity	QLOGIC CORP	0.02%	11.50%	0.00%	0.00%	0.00%
QCOM UW Equity	QUALCOMM INC	0.66%	15.50%	0.10%	1.67%	0.01%
PWR UN Equity	QUANTA SERVICES INC	0.04%	13.85%	0.01%	0.00%	0.00%
DGX UN Equity	QUEST DIAGNOSTICS	0.08%	11.95%	0.01%	0.81%	0.00%
Q UN Equity	QWEST COMMUNICATIONS INTL	0.10%	5.20%	0.01%	5.00%	0.01%
RSH UN Equity	RADIOSHACK CORP	0.02%	8.80%	0.00%	1.16%	0.00%
RRC UN Equity	RANGE RESOURCES CORP	0.05%	15.75%	0.01%	0.42%	0.00%
RTN UN Equity	RAYTHEON COMPANY	0.16%	8.71%	0.01%	3.16%	0.00%
RHT UN Equity	RED HAT INC	0.07%	18.14%	0.01%	0.00%	0.00%
RF UN Equity	REGIONS FINANCIAL CORP	0.09%	7.00%	0.01%	0.53%	0.00%
RSG UN Equity	REPUBLIC SERVICES INC	0.11%	13.00%	0.01%	2.43%	0.00%
RAI UN Equity	REYNOLDS AMERICAN INC	0.16%	6.00%	0.01%	6.09%	0.01%
RHI UN Equity	ROBERT HALF INTL INC	0.04%	16.50%	0.01%	1.93%	0.00%
ROK UN Equity	ROCKWELL AUTOMATION INC	0.08%	22.28%	0.02%	2.15%	0.00%
COL UN Equity	ROCKWELL COLLINS INC.	0.09%	8.55%	0.01%	1.69%	0.00%
ROP UN Equity	ROPER INDUSTRIES INC	0.06%	13.50%	0.01%	0.56%	0.00%
ROST UW Equity	ROSS STORES INC	0.06%	14.00%	0.01%	1.18%	0.00%
RDC UN Equity	ROWAN COMPANIES INC	0.03%	13.00%	0.00%	0.00%	0.00%
RRD UW Equity	RR DONNELLEY & SONS CO	0.03%	10.00%	0.00%	5.78%	0.00%
R UN Equity	RYDER SYSTEM INC	0.02%	14.85%	0.00%	2.29%	0.00%
SWY UN Equity	SAFEWAY INC	0.07%	8.55%	0.01%	2.09%	0.00%
SAI UN Equity	SAIC INC	0.05%	10.20%	0.01%	0.00%	0.00%
CRM UN Equity	SALESFORCE.COM INC	0.13%	28.93%	0.04%	0.00%	0.00%
SNDK UW Equity	SANDISK CORP	0.09%	14.33%	0.01%	0.00%	0.00%
SLE UN Equity	SARA LEE CORP	0.09%	9.62%	0.01%	3.04%	0.00%
SCG UN Equity	SCANA CORP	0.05%	4.88%	0.00%	4.66%	0.00%
SLB UN Equity	SCHLUMBERGER LTD	0.80%	15.96%	0.13%	1.33%	0.01%
SCHW UN Equity	SCHWAB (CHARLES) CORP	0.15%	13.00%	0.02%	1.72%	0.00%
SNI UN Equity	SCRIPPS NETWORKS INTER-CL A	0.06%	14.66%	0.01%	0.64%	0.00%
SEE UN Equity	SEALED AIR CORP	0.03%	6.00%	0.00%	1.71%	0.00%
SHLD UW Equity	SEARS HOLDINGS CORP	0.08%	10.00%	0.01%	0.00%	0.00%
SRE UN Equity	SEMPRA ENERGY	0.12%	6.50%	0.01%	2.94%	0.00%
SHW UN Equity	SHERWIN-WILLIAMS CO/THE	0.07%	7.15%	0.01%	1.97%	0.00%
SIAL UW Equity	SIGMA-ALDRICH	0.07%	9.00%	0.01%	1.04%	0.00%
SPG UN Equity	SIMON PROPERTY GROUP INC	0.26%	5.19%	0.01%	2.49%	0.01%
SLM UN Equity	SLM CORP	0.05%	10.00%	0.01%	0.00%	0.00%
SNA UN Equity	SNAP-ON INC	0.03%	10.00%	0.00%	0.00%	0.00%
SO UN Equity	SOUTHERN CO	0.29%	4.86%	0.01%	4.82%	0.01%
LUV UN Equity	SOUTHWEST AIRLINES CO	0.09%	8.33%	0.01%	0.11%	0.00%
SWN UN Equity	SOUTHWESTERN ENERGY CO	0.11%	26.00%	0.03%	0.00%	0.00%
SE UN Equity	SPECTRA ENERGY CORP	0.14%	6.67%	0.01%	4.21%	0.01%
S UN Equity	SPRINT NEXTEL CORP	0.12%	4.50%	0.01%	0.00%	0.00%
STJ UN Equity	ST JUDE MEDICAL INC	0.12%	12.28%	0.01%	0.00%	0.00%
SWK UN Equity	STANLEY BLACK & DECKER INC	0.10%	14.00%	0.01%	2.09%	0.00%
SPLS UW Equity	STAPLES INC	0.14%	14.73%	0.02%	1.79%	0.00%
SBUX UW Equity	STARBUCKS CORP	0.18%	15.74%	0.03%	1.98%	0.00%
HOT UN Equity	STARWOOD HOTELS & RESORTS	0.10%	16.00%	0.02%	0.50%	0.00%
STT UN Equity	STATE STREET CORP	0.18%	7.96%	0.01%	0.21%	0.00%
SRCL UW Equity	STERICYCLE INC	0.06%	17.80%	0.01%	0.00%	0.00%
SYK UN Equity	STRYKER CORP	0.18%	12.76%	0.02%	1.18%	0.00%
SUN UN Equity	SUNOCO INC	0.04%	0.71%	0.00%	1.49%	0.00%
STI UN Equity	SUNTRUST BANKS INC	0.12%	8.00%	0.01%	0.15%	0.00%
SVU UN Equity	SUPERVALU INC	0.02%	No Long-Term Growth		3.04%	0.00%
SYMC UW Equity	SYMANTEC CORP	0.11%	9.25%	0.01%	0.00%	0.00%
SYY UN Equity	SYSCO CORP	0.15%	10.50%	0.02%	3.71%	0.01%
TROW UW Equity	T ROWE PRICE GROUP INC	0.12%	10.80%	0.01%	2.03%	0.00%
TGT UN Equity	TARGET CORP	0.36%	13.48%	0.05%	1.49%	0.01%
TE UN Equity	TECO ENERGY INC	0.03%	7.30%	0.00%	4.62%	0.00%
TLAB UW Equity	TELLABS INC	0.03%	10.33%	0.00%	1.04%	0.00%
THC UN Equity	TENET HEALTHCARE CORP	0.02%	8.25%	0.00%	0.00%	0.00%
TDC UN Equity	TERADATA CORP	0.06%	11.00%	0.01%	0.00%	0.00%
TER UN Equity	TERADYNE INC	0.02%	15.00%	0.00%	0.00%	0.00%
TSO UN Equity	TESORO CORP	0.02%	24.94%	0.00%	0.00%	0.00%
TXN UN Equity	TEXAS INSTRUMENTS INC	0.31%	10.67%	0.03%	1.71%	0.01%
TXT UN Equity	TEXTRON INC	0.05%	51.68%	0.03%	0.38%	0.00%
TMO UN Equity	THERMO FISHER SCIENTIFIC INC	0.18%	11.53%	0.02%	0.00%	0.00%
TIF UN Equity	TIFFANY & CO	0.06%	13.72%	0.01%	1.75%	0.00%
TWC UN Equity	TIME WARNER CABLE	0.18%	13.96%	0.03%	2.82%	0.01%
TWX UN Equity	TIME WARNER INC	0.32%	14.51%	0.05%	2.72%	0.01%
TIE UN Equity	TITANIUM METALS CORP	0.03%	15.00%	0.01%	0.72%	0.00%
TJX UN Equity	TJX COMPANIES INC	0.16%	14.00%	0.02%	1.30%	0.00%
TMK UN Equity	TORCHMARK CORP	0.04%	7.33%	0.00%	1.11%	0.00%
TSS UN Equity	TOTAL SYSTEM SERVICES INC	0.03%	9.67%	0.00%	1.79%	0.00%
TRV UN Equity	TRAVELERS COS INC/THE	0.23%	7.44%	0.02%	2.62%	0.01%
TYC UN Equity	TYCO INTERNATIONAL LTD	0.17%	12.28%	0.02%	2.50%	0.00%
TSN UN Equity	TYSON FOODS INC-CL A	0.04%	8.50%	0.00%	1.07%	0.00%
UNP UN Equity	UNION PACIFIC CORP	0.39%	14.87%	0.06%	1.45%	0.01%
UPS UN Equity	UNITED PARCEL SERVICE-CL B	0.45%	13.26%	0.06%	2.74%	0.01%
UTX UN Equity	UNITED TECHNOLOGIES CORP	0.63%	10.93%	0.07%	2.30%	0.01%
UNH UN Equity	UNITEDHEALTH GROUP INC	0.36%	12.25%	0.04%	0.89%	0.00%
UNM UN Equity	UNUM GROUP	0.07%	9.33%	0.01%	1.53%	0.00%
URBN UW Equity	URBAN OUTFITTERS INC	0.05%	20.27%	0.01%	0.00%	0.00%
USB UN Equity	US BANCORP	0.40%	6.67%	0.03%	0.87%	0.00%
X UN Equity	UNITED STATES STEEL CORP	0.06%	5.00%	0.00%	0.45%	0.00%
VLO UN Equity	VALERO ENERGY CORP	0.10%	23.42%	0.02%	1.07%	0.00%
VAR UN Equity	VARIAN MEDICAL SYSTEMS INC	0.07%	16.67%	0.01%	0.00%	0.00%
VTR UN Equity	VENTAS INC	0.08%	5.45%	0.00%	3.95%	0.00%
VRSN UW Equity	VERISIGN INC	0.05%	10.00%	0.01%	0.00%	0.00%
VZ UN Equity	VERIZON COMMUNICATIONS INC	0.84%	3.87%	0.03%	5.93%	0.05%
VFC UN Equity	VF CORP	0.08%	11.00%	0.01%	2.83%	0.00%

VIA/B UN Equity	VIACOM INC-CLASS B	0.19%	11.33%	0.02%	1.59%	0.00%
V UN Equity	VISA INC-CLASS A SHARES	0.34%	20.57%	0.07%	0.69%	0.00%
VNO UN Equity	VORNADO REALTY TRUST	0.15%	6.25%	0.01%	2.95%	0.00%
VMC UN Equity	VULCAN MATERIALS CO	0.04%	8.50%	0.00%	2.76%	0.00%
WMT UN Equity	WAL-MART STORES INC	1.80%	11.04%	0.20%	2.23%	0.04%
WAG UN Equity	WALGREEN CO	0.31%	14.38%	0.04%	1.94%	0.01%
DIS UN Equity	WALT DISNEY CO/THE	0.61%	10.69%	0.07%	1.09%	0.01%
WPO UN Equity	WASHINGTON POST-CLASS B	0.03%	No Long-Term Growth		0.00%	0.00%
WM UN Equity	WASTE MANAGEMENT INC	0.16%	10.50%	0.02%	3.35%	0.01%
WAT UN Equity	WATERS CORP	0.06%	12.50%	0.01%	0.00%	0.00%
WPI UN Equity	WATSON PHARMACEUTICALS INC	0.05%	9.40%	0.00%	0.00%	0.00%
WLP UN Equity	WELLPOINT INC	0.21%	11.00%	0.02%	0.00%	0.00%
WFC UN Equity	WELLS FARGO & CO	1.25%	4.08%	0.05%	0.80%	0.01%
WDC UN Equity	WESTERN DIGITAL CORP	0.06%	7.50%	0.00%	0.00%	0.00%
WU UN Equity	WESTERN UNION CO	0.11%	11.79%	0.01%	1.40%	0.00%
WY UN Equity	WEYERHAEUSER CO	0.08%	5.50%	0.00%	1.21%	0.00%
WHR UN Equity	WHIRLPOOL CORP	0.06%	15.00%	0.01%	2.00%	0.00%
WFMI UW Equity	WHOLE FOODS MARKET INC	0.06%	19.50%	0.01%	0.00%	0.00%
WMB UN Equity	WILLIAMS COS INC	0.12%	12.97%	0.01%	2.28%	0.00%
WIN UW Equity	WINDSTREAM CORP	0.05%	0.45%	0.00%	8.14%	0.00%
WEC UN Equity	WISCONSIN ENERGY CORP	0.06%	8.00%	0.00%	2.75%	0.00%
GWW UN Equity	WW GRAINGER INC	0.08%	13.62%	0.01%	1.64%	0.00%
WYN UN Equity	WYNDHAM WORLDWIDE CORP	0.05%	5.20%	0.00%	1.65%	0.00%
WYNN UW Equity	WYNN RESORTS LTD	0.11%	15.51%	0.02%	0.77%	0.00%
XEL UN Equity	XCEL ENERGY INC	0.10%	6.17%	0.01%	4.30%	0.00%
XRX UN Equity	XEROX CORP	0.14%	7.00%	0.01%	1.58%	0.00%
XLNX UW Equity	XILINX INC	0.06%	17.00%	0.01%	2.43%	0.00%
XL UN Equity	XL GROUP PLC	0.07%	No Long-Term Growth		1.64%	0.00%
YHOO UW Equity	YAHOO! INC	0.18%	10.77%	0.02%	0.00%	0.00%
YUM UN Equity	YUM! BRANDS INC	0.20%	12.38%	0.03%	1.82%	0.00%
ZMH UN Equity	ZIMMER HOLDINGS INC	0.09%	11.11%	0.01%	0.00%	0.00%
ZION UW Equity	ZIONS BANCORPORATION	0.04%	7.67%	0.00%	0.18%	0.00%

CAPM UTILIZING ALTERNATIVE MARKET RISK PREMIUM CALCULATIONS

[1] Near Term Projected 30 Year Treasury		4.22%	
Current 30 Year Treasury (30-day average)			3.75%
Sharpe Ratio Derived Market Risk Premium	9.94%	10.88%	10.41%
Ex-Ante Approach Derived Market Risk Premium	9.42%	10.53%	10.06%
Proxy Group Historical Beta	0.67		

[1] Source: Aspen Publishers, Blue Chip Financial Forecasts, Vol. 29, No. 10 October 1, 2010, p. 2

MARKET RISK PREMIUM UTILIZING EXPECTED MARKET SHARPE RATIO

RP_h	Vol_h		
6.70%	20.40%		
VOL_e		Expected Market Sharpe Ratio	RP_e
30.26%		32.85%	9.94%

$$\frac{RP_h}{Vol_h} \times Vol_e = RP_e$$

RP_h = *historical arithmetic average Risk Premium*
Vol_h = historical market volatility
Vol_e = expected market volatility

Date	VXV	02/11 VIX Futures	03/11 VIX Futures	04/11 VIX Futures
10/8/2010	24.06	30.50	31.40	31.45
10/7/2010	24.89	30.75	31.65	31.70
10/6/2010	24.91	30.75	31.70	31.75
10/5/2010	25.08	30.70	31.65	31.80
10/4/2010	26.32	31.40	32.25	32.40
10/1/2010	25.70	31.05	32.00	32.25
9/30/2010	26.40	31.35	32.25	32.50
9/29/2010	25.91	30.95	31.75	32.05
9/28/2010	25.34	30.65	31.45	31.65
9/27/2010	25.20	30.65	31.55	31.65
9/24/2010	24.75	30.60	31.55	31.60
9/23/2010	26.16	31.15	32.10	32.10
9/22/2010	25.16	30.55	31.65	31.70
9/21/2010	24.94	30.30	31.40	31.50
9/20/2010	24.59	30.30	31.35	31.50
9/17/2010	25.12	30.70	31.55	31.65
9/16/2010	24.96	30.55	31.40	31.50
9/15/2010	24.93	30.55	31.30	31.45
9/14/2010	24.74	30.70	31.35	31.45
9/13/2010	24.75	30.85	31.45	31.45
9/10/2010	25.59	31.40	32.05	31.85
9/9/2010	26.10	31.55	32.05	31.90
9/8/2010	26.30	31.80	32.30	32.15
9/7/2010	26.77	32.20	32.55	32.25
9/3/2010	25.31	31.85	32.15	32.05
9/2/2010	26.62	32.40	32.70	32.50
9/1/2010	27.29	32.55	32.90	32.80
8/31/2010	29.04	33.20	33.45	33.30
8/30/2010	30.01	33.15	33.25	33.10
8/27/2010	28.40	32.40	32.65	32.60
Average	30.26			

ESTIMATED MARKET RISK PREMIUM DERIVED FROM

Estimated Weighted Index Dividend Yield	Weighted Index Long-Term Growth Rate	S&P 500 Estimated Required Market Return
1.88%	11.17%	13.16%

Percent of Index Capitalization Represented by Estimate:	97.22%

30 Day Average 30-Year Treasury Yield	3.75%
Implied Market Risk Premium	9.42%

Standard and Poor's 500 Index

Ticker	Name	Weight in the Index (%)	Long-Term Growth Estimate (%)	Cap-Weighted Long-Term Growth	Estimated 2009 Dividend Yield (%)	Cap-Weighted Dividend Yield
MMM UN Equity	3M CO	0.58%	12.13%	0.07%	2.37%	0.01%
ABT UN Equity	ABBOTT LABORATORIES	0.75%	10.58%	0.08%	3.29%	0.02%
ANF UN Equity	ABERCROMBIE & FITCH CO-CL A	0.04%	17.92%	0.01%	1.56%	0.00%
ACE UN Equity	ACE LTD	0.19%	11.40%	0.02%	2.13%	0.00%
ADBE UW Equity	ADOBE SYSTEMS INC	0.13%	14.42%	0.02%	0.00%	0.00%
AMD UN Equity	ADVANCED MICRO DEVICES	0.05%	13.75%	0.01%	0.00%	0.00%
AES UN Equity	AES CORP	0.09%	9.50%	0.01%	0.00%	0.00%
AET UN Equity	AETNA INC	0.12%	11.75%	0.01%	0.05%	0.00%
AFL UN Equity	AFLAC INC	0.24%	11.68%	0.03%	2.05%	0.00%
A UN Equity	AGILENT TECHNOLOGIES INC	0.11%	32.70%	0.04%	0.00%	0.00%
APD UN Equity	AIR PRODUCTS & CHEMICALS INC	0.16%	10.18%	0.02%	2.46%	0.00%
ARG UN Equity	AIRGAS INC	0.05%	13.52%	0.01%	1.30%	0.00%
AKS UN Equity	AK STEEL HOLDING CORP	0.01%	No Long-Term Growth		1.37%	0.00%
AKAM UW Equity	AKAMAI TECHNOLOGIES INC	0.08%	14.78%	0.01%	0.00%	0.00%
AA UN Equity	ALCOA INC	0.12%	3.00%	0.00%	0.90%	0.00%
AYE UN Equity	ALLEGHENY ENERGY INC	0.04%	No Long-Term Growth		2.52%	0.00%
ATI UN Equity	ALLEGHENY TECHNOLOGIES INC	0.04%	No Long-Term Growth		1.47%	0.00%
AGN UN Equity	ALLERGAN INC	0.19%	13.79%	0.03%	0.29%	0.00%
ALL UN Equity	ALLSTATE CORP	0.16%	8.20%	0.01%	2.42%	0.00%
ALTR UW Equity	ALTERA CORPORATION	0.08%	21.50%	0.02%	0.74%	0.00%
MO UN Equity	ALTRIA GROUP INC	0.47%	7.50%	0.04%	5.98%	0.03%
AMZN UW Equity	AMAZON.COM INC	0.64%	25.24%	0.16%	0.00%	0.00%
AEE UN Equity	AMEREN CORPORATION	0.06%	No Long-Term Growth		5.32%	0.00%
AEP UN Equity	AMERICAN ELECTRIC POWER	0.16%	4.00%	0.01%	4.70%	0.01%
AXP UN Equity	AMERICAN EXPRESS CO	0.43%	10.83%	0.05%	1.82%	0.01%
AIG UN Equity	AMERICAN INTERNATIONAL GROUP	0.27%	6.00%	0.02%	0.00%	0.00%
AMT UN Equity	AMERICAN TOWER CORP-CL A	0.19%	20.27%	0.04%	0.00%	0.00%
AMP UN Equity	AMERIPRISE FINANCIAL INC	0.12%	16.05%	0.02%	1.39%	0.00%
ABC UN Equity	AMERISOURCEBERGEN CORP	0.08%	12.83%	0.01%	0.94%	0.00%
AMGN UW Equity	AMGEN INC	0.49%	8.80%	0.04%	0.00%	0.00%
APH UN Equity	AMPHENOL CORP-CL A	0.08%	15.00%	0.01%	0.12%	0.00%
APC UN Equity	ANADARKO PETROLEUM CORP	0.26%	13.51%	0.04%	0.63%	0.00%
ADI UN Equity	ANALOG DEVICES INC	0.09%	11.50%	0.01%	2.65%	0.00%
AON UN Equity	AON CORP	0.11%	6.50%	0.01%	1.56%	0.00%
APA UN Equity	APACHE CORP	0.34%	9.31%	0.03%	0.59%	0.00%
AIV UN Equity	APARTMENT INVT & MGMT CO -A	0.02%	5.45%	0.00%	1.73%	0.00%
APOL UW Equity	APOLLO GROUP INC-CL A	0.07%	12.04%	0.01%	0.00%	0.00%
AAPL UW Equity	APPLE INC	2.51%	19.35%	0.49%	0.00%	0.00%
AMAT UW Equity	APPLIED MATERIALS INC	0.15%	13.33%	0.02%	2.21%	0.00%
ADM UN Equity	ARCHER-DANIELS-MIDLAND CO	0.19%	10.00%	0.02%	1.83%	0.00%
AIZ UN Equity	ASSURANT INC	0.04%	9.67%	0.00%	1.54%	0.00%
T UN Equity	AT&T INC	1.55%	6.04%	0.09%	5.88%	0.09%
ADSK UW Equity	AUTODESK INC	0.07%	14.66%	0.01%	0.00%	0.00%
ADP UW Equity	AUTOMATIC DATA PROCESSING	0.19%	9.86%	0.02%	3.32%	0.01%
AN UN Equity	AUTONATION INC	0.03%	15.82%	0.00%	0.00%	0.00%
AZO UN Equity	AUTOZONE INC	0.10%	14.01%	0.01%	0.00%	0.00%
AVB UN Equity	AVALONBAY COMMUNITIES INC	0.09%	7.20%	0.01%	3.21%	0.00%
AVY UN Equity	AVERY DENNISON CORP	0.04%	7.00%	0.00%	2.10%	0.00%
AVP UN Equity	AVON PRODUCTS INC	0.14%	11.67%	0.02%	2.52%	0.00%
BHI UN Equity	BAKER HUGHES INC	0.18%	5.23%	0.01%	1.29%	0.00%
BLL UN Equity	BALL CORP	0.05%	8.90%	0.00%	0.65%	0.00%
BK UN Equity	BANK OF NEW YORK MELLON CORP	0.30%	9.88%	0.03%	1.49%	0.00%
BAC UN Equity	BANK OF AMERICA CORP	1.23%	9.13%	0.11%	0.30%	0.00%
BAX UN Equity	BAXTER INTERNATIONAL INC	0.27%	10.50%	0.03%	2.36%	0.01%
BBT UN Equity	BB&T CORP	0.15%	7.00%	0.01%	2.56%	0.00%
BDX UN Equity	BECTON DICKINSON AND CO	0.16%	10.07%	0.02%	2.07%	0.00%
BBBY UW Equity	BED BATH & BEYOND INC	0.10%	14.66%	0.02%	0.00%	0.00%
BMS UN Equity	BEMIS COMPANY	0.03%	11.17%	0.00%	2.71%	0.00%
BRK/B UN Equity	BERKSHIRE HATHAWAY INC-CL B	0.77%	No Long-Term Growth		0.00%	0.00%
BBY UN Equity	BEST BUY CO INC	0.15%	12.29%	0.02%	1.39%	0.00%
BIG UN Equity	BIG LOTS INC	0.02%	14.00%	0.00%	0.00%	0.00%
BIIB UW Equity	BIOGEN IDEC INC	0.13%	7.96%	0.01%	0.00%	0.00%
BMC UW Equity	BMC SOFTWARE INC	0.07%	13.65%	0.01%	0.00%	0.00%
BA UN Equity	BOEING CO/THE	0.48%	16.96%	0.08%	2.40%	0.01%
BXP UN Equity	BOSTON PROPERTIES INC	0.11%	5.40%	0.01%	2.31%	0.00%
BSX UN Equity	BOSTON SCIENTIFIC CORP	0.09%	9.43%	0.01%	0.00%	0.00%
BMY UN Equity	BRISTOL-MYERS SQUIBB CO	0.43%	4.52%	0.02%	4.67%	0.02%
BRCM UW Equity	BROADCOM CORP-CL A	0.15%	18.33%	0.03%	0.85%	0.00%
BF/B UN Equity	BROWN-FORMAN CORP-CLASS B	0.05%	13.00%	0.01%	2.00%	0.00%
CA UW Equity	CA INC	0.10%	11.00%	0.01%	0.73%	0.00%
COG UN Equity	CABOT OIL & GAS CORP	0.03%	No Long-Term Growth		0.33%	0.00%
CAM UN Equity	CAMERON INTERNATIONAL CORP	0.10%	No Long-Term Growth		0.00%	0.00%

CPB UN Equity	CAMPBELL SOUP CO	0.11%	7.73%	0.01%	3.12%	0.00%
COF UN Equity	CAPITAL ONE FINANCIAL CORP	0.17%	9.92%	0.02%	0.49%	0.00%
CAH UN Equity	CARDINAL HEALTH INC	0.11%	11.11%	0.01%	2.34%	0.00%
CFN UN Equity	CAREFUSION CORP	0.05%	8.94%	0.00%	0.00%	0.00%
KMX UN Equity	CARMAX INC	0.06%	13.02%	0.01%	0.00%	0.00%
CCL UN Equity	CARNIVAL CORP	0.22%	14.75%	0.03%	0.95%	0.00%
CAT UN Equity	CATERPILLAR INC	0.46%	12.20%	0.06%	2.15%	0.01%
CBG UN Equity	CB RICHARD ELLIS GROUP INC-A	0.06%	11.00%	0.01%	0.00%	0.00%
CBS UN Equity	CBS CORP-CLASS B NON VOTING	0.10%	6.52%	0.01%	1.12%	0.00%
CELG UW Equity	CELGENE CORP	0.25%	23.61%	0.06%	0.00%	0.00%
CNP UN Equity	CENTERPOINT ENERGY INC	0.06%	6.28%	0.00%	4.89%	0.00%
CTL UN Equity	CENTURYLINK INC	0.11%	0.53%	0.00%	7.23%	0.01%
CEPH UW Equity	CEPHALON INC	0.04%	12.38%	0.01%	0.00%	0.00%
CERN UW Equity	CERNER CORP	0.07%	18.33%	0.01%	0.00%	0.00%
CF UN Equity	CF INDUSTRIES HOLDINGS INC	0.08%	5.00%	0.00%	0.34%	0.00%
CHRW UW Equity	C.H. ROBINSON WORLDWIDE INC	0.11%	16.00%	0.02%	1.42%	0.00%
CHK UN Equity	CHESAPEAKE ENERGY CORP	0.14%	8.75%	0.01%	1.32%	0.00%
CVX UN Equity	CHEVRON CORP	1.53%	18.99%	0.29%	3.42%	0.05%
CB UN Equity	CHUBB CORP	0.17%	8.33%	0.01%	2.58%	0.00%
CI UN Equity	CIGNA CORP	0.09%	10.19%	0.01%	0.07%	0.00%
CINF UW Equity	CINCINNATI FINANCIAL CORP	0.04%	No Long-Term Growth		5.31%	0.00%
CTAS UW Equity	CINTAS CORP	0.04%	10.20%	0.00%	1.81%	0.00%
CSCO UW Equity	CISCO SYSTEMS INC	1.19%	11.58%	0.14%	0.00%	0.00%
C UN Equity	CITIGROUP INC	1.13%	1.50%	0.02%	0.00%	0.00%
CTXS UW Equity	CITRIX SYSTEMS INC	0.10%	12.55%	0.01%	0.00%	0.00%
CLF UN Equity	CLIFFS NATURAL RESOURCES INC	0.09%	No Long-Term Growth		0.67%	0.00%
CLX UN Equity	CLOROX COMPANY	0.09%	9.90%	0.01%	3.20%	0.00%
CME UW Equity	CME GROUP INC	0.16%	13.67%	0.02%	1.80%	0.00%
CMS UN Equity	CMS ENERGY CORP	0.04%	7.40%	0.00%	3.63%	0.00%
COH UN Equity	COACH INC	0.12%	14.71%	0.02%	1.31%	0.00%
KO UN Equity	COCA-COLA CO/THE	1.26%	8.50%	0.11%	2.94%	0.04%
CCE UN Equity	COCA-COLA ENTERPRISES	0.07%	10.00%	0.01%	5.98%	0.00%
CTSH UW Equity	COGNIZANT TECH SOLUTIONS-A	0.18%	19.29%	0.04%	0.00%	0.00%
CL UN Equity	COLGATE-PALMOLIVE CO	0.34%	9.80%	0.03%	2.63%	0.01%
CMCSA UW Equity	COMCAST CORP-CLASS A	0.34%	16.33%	0.06%	2.02%	0.01%
CMA UN Equity	COMERICA INC	0.06%	6.07%	0.00%	0.51%	0.00%
CSC UN Equity	COMPUTER SCIENCES CORP	0.07%	9.00%	0.01%	0.55%	0.00%
CPWR UW Equity	COMPUWARE CORP	0.02%	5.00%	0.00%	0.00%	0.00%
CAG UN Equity	CONAGRA FOODS INC	0.09%	7.90%	0.01%	3.97%	0.00%
COP UN Equity	CONOCOPHILLIPS	0.81%	18.85%	0.15%	3.56%	0.03%
ED UN Equity	CONSOLIDATED EDISON INC	0.13%	4.36%	0.01%	4.91%	0.01%
CNX UN Equity	CONSOL ENERGY INC	0.08%	46.00%	0.04%	1.00%	0.00%
CEG UN Equity	CONSTELLATION ENERGY GROUP	0.06%	No Long-Term Growth		2.91%	0.00%
STZ UN Equity	CONSTELLATION BRANDS INC-A	0.03%	7.00%	0.00%	0.00%	0.00%
GLW UN Equity	CORNING INC	0.27%	11.40%	0.03%	1.08%	0.00%
COST UW Equity	COSTCO WHOLESALE CORP	0.25%	13.05%	0.03%	1.46%	0.00%
CVH UN Equity	COVENTRY HEALTH CARE INC	0.03%	9.67%	0.00%	0.00%	0.00%
BCR UN Equity	CR BARD INC	0.07%	12.00%	0.01%	0.84%	0.00%
CSX UN Equity	CSX CORP	0.21%	11.61%	0.02%	1.64%	0.00%
CMI UN Equity	CUMMINS INC	0.17%	11.50%	0.02%	0.88%	0.00%
CVS UN Equity	CVS CAREMARK CORP	0.39%	11.88%	0.05%	1.09%	0.00%
DHR UN Equity	DANAHER CORP	0.25%	14.75%	0.04%	0.18%	0.00%
DRI UN Equity	DARDEN RESTAURANTS INC	0.05%	12.50%	0.01%	3.01%	0.00%
DVA UN Equity	DAVITA INC	0.07%	12.39%	0.01%	0.00%	0.00%
DF UN Equity	DEAN FOODS CO	0.02%	8.25%	0.00%	0.00%	0.00%
DE UN Equity	DEERE & CO	0.29%	8.75%	0.03%	1.52%	0.00%
DELL UW Equity	DELL INC	0.25%	7.83%	0.02%	0.00%	0.00%
DNR UN Equity	DENBURY RESOURCES INC	0.07%	6.50%	0.00%	0.00%	0.00%
XRAY UW Equity	DENTSPLY INTERNATIONAL INC	0.04%	11.75%	0.00%	0.66%	0.00%
DVN UN Equity	DEVON ENERGY CORPORATION	0.27%	6.39%	0.02%	0.96%	0.00%
DV UN Equity	DEVRY INC	0.03%	16.60%	0.01%	0.42%	0.00%
DO UN Equity	DIAMOND OFFSHORE DRILLING	0.09%	18.00%	0.02%	6.96%	0.01%
DTV UW Equity	DIRECTV-CLASS A	0.33%	25.41%	0.09%	0.00%	0.00%
DFS UN Equity	DISCOVER FINANCIAL SERVICES	0.09%	6.00%	0.01%	0.45%	0.00%
DISCA UW Equity	DISCOVERY COMMUNICATIONS-A	0.06%	22.26%	0.01%	0.00%	0.00%
D UN Equity	DOMINION RESOURCES INC/VA	0.24%	5.00%	0.01%	4.12%	0.01%
DOV UN Equity	DOVER CORP	0.09%	12.00%	0.01%	1.95%	0.00%
DOW UN Equity	DOW CHEMICAL	0.32%	7.50%	0.02%	2.05%	0.01%
DHI UN Equity	DR HORTON INC	0.03%	7.67%	0.00%	1.39%	0.00%
DPS UN Equity	DR PEPPER SNAPPLE GROUP INC	0.08%	9.00%	0.01%	2.41%	0.00%
DTE UN Equity	DTE ENERGY COMPANY	0.07%	4.80%	0.00%	4.59%	0.00%
DD UN Equity	DU PONT (E.I.) DE NEMOURS	0.39%	13.56%	0.05%	3.51%	0.01%
DUK UN Equity	DUKE ENERGY CORP	0.21%	3.83%	0.01%	5.52%	0.01%
DNB UN Equity	DUN & BRADSTREET CORP	0.03%	10.00%	0.00%	1.86%	0.00%
ETFC UW Equity	E*TRADE FINANCIAL CORP	0.03%	90.00%	0.03%	0.00%	0.00%
EMN UN Equity	EASTMAN CHEMICAL COMPANY	0.05%	7.00%	0.00%	2.24%	0.00%
EK UN Equity	EASTMAN KODAK CO	0.01%	10.00%	0.00%	0.00%	0.00%
ETN UN Equity	EATON CORP	0.13%	10.25%	0.01%	2.57%	0.00%
EBAY UW Equity	EBAY INC	0.30%	8.77%	0.03%	0.00%	0.00%
ECL UN Equity	ECOLAB INC	0.11%	14.00%	0.02%	1.19%	0.00%
EIX UN Equity	EDISON INTERNATIONAL	0.11%	0.60%	0.00%	3.59%	0.00%
EP UN Equity	EL PASO CORP	0.09%	11.50%	0.01%	0.30%	0.00%
ERTS UW Equity	ELECTRONIC ARTS INC	0.05%	15.71%	0.01%	0.00%	0.00%
LLY UN Equity	ELI LILLY & CO	0.39%	No Long-Term Growth		5.21%	0.00%
EMC UN Equity	EMC CORP/MASS	0.38%	14.90%	0.06%	0.00%	0.00%
EMR UN Equity	EMERSON ELECTRIC CO	0.37%	11.19%	0.04%	2.71%	0.01%
ETR UN Equity	ENTERGY CORP	0.13%	2.75%	0.00%	4.19%	0.01%
EOG UN Equity	EOG RESOURCES INC	0.23%	16.00%	0.04%	0.63%	0.00%
EQT UN Equity	EQT CORP	0.05%	14.50%	0.01%	2.34%	0.00%
EFX UN Equity	EQUIFAX INC	0.04%	9.75%	0.00%	0.51%	0.00%
EQR UN Equity	EQUITY RESIDENTIAL	0.13%	6.22%	0.01%	2.71%	0.00%
EL UN Equity	ESTEE LAUDER COMPANIES-CL A	0.07%	13.77%	0.01%	0.94%	0.00%
EXC UN Equity	EXELON CORP	0.26%	No Long-Term Growth		4.90%	0.00%
EXPE UW Equity	EXPEDIA INC	0.07%	14.00%	0.01%	0.79%	0.00%
EXPD UW Equity	EXPEDITORS INTL WASH INC	0.09%	15.93%	0.01%	0.82%	0.00%
ESRX UW Equity	EXPRESS SCRIPTS INC	0.24%	18.23%	0.04%	0.00%	0.00%
XOM UN Equity	EXXON MOBIL CORP	3.02%	15.06%	0.46%	2.68%	0.08%
FDO UN Equity	FAMILY DOLLAR STORES	0.06%	13.86%	0.01%	1.44%	0.00%
FAST UW Equity	FASTENAL CO	0.07%	20.90%	0.01%	1.56%	0.00%

FII UN Equity	FEDERATED INVESTORS INC-CL B	0.02%	6.00%	0.00%	8.31%	0.00%
FDX UN Equity	FEDEX CORP	0.26%	13.93%	0.04%	0.54%	0.00%
FIS UN Equity	FIDELITY NATIONAL INFORMATIO	0.08%	13.22%	0.01%	0.72%	0.00%
FITB UW Equity	FIFTH THIRD BANCORP	0.09%	4.56%	0.00%	0.31%	0.00%
FHN UN Equity	FIRST HORIZON NATIONAL CORP	0.02%	8.00%	0.00%	0.00%	0.00%
FSLR UW Equity	FIRST SOLAR INC	0.11%	18.60%	0.02%	0.00%	0.00%
FE UN Equity	FIRSTENERGY CORP	0.11%	3.00%	0.00%	5.75%	0.01%
FISV UW Equity	FISERV INC	0.07%	12.42%	0.01%	0.00%	0.00%
FLIR UW Equity	FLIR SYSTEMS INC	0.04%	18.60%	0.01%	0.00%	0.00%
FLS UN Equity	FLOWSERVE CORP	0.06%	9.00%	0.01%	1.01%	0.00%
FLR UN Equity	FLUOR CORP	0.09%	14.33%	0.01%	0.99%	0.00%
FMC UN Equity	FMC CORP	0.05%	9.83%	0.00%	0.71%	0.00%
FTI UN Equity	FMC TECHNOLOGIES INC	0.08%	31.20%	0.02%	0.00%	0.00%
F UN Equity	FORD MOTOR CO	0.42%	10.84%	0.05%	0.00%	0.00%
FRX UN Equity	FOREST LABORATORIES INC	0.09%	No Long-Term Growth		0.00%	0.00%
FO UN Equity	FORTUNE BRANDS INC	0.08%	11.33%	0.01%	1.37%	0.00%
BEN UN Equity	FRANKLIN RESOURCES INC	0.24%	10.00%	0.02%	0.80%	0.00%
FCX UN Equity	FREEPORT-MCMORAN COPPER	0.42%	5.00%	0.02%	1.05%	0.00%
FTR UN Equity	FRONTIER COMMUNICATIONS CORP	0.08%	No Long-Term Growth		10.03%	0.00%
GME UN Equity	GAMESTOP CORP-CLASS A	0.03%	14.00%	0.00%	0.00%	0.00%
GCI UN Equity	GANNETT CO	0.03%	5.50%	0.00%	1.15%	0.00%
GPS UN Equity	GAP INC/THE	0.11%	10.46%	0.01%	2.13%	0.00%
GD UN Equity	GENERAL DYNAMICS CORP	0.22%	8.14%	0.02%	2.53%	0.01%
GE UN Equity	GENERAL ELECTRIC CO	1.69%	15.85%	0.27%	2.46%	0.04%
GIS UN Equity	GENERAL MILLS INC	0.22%	9.32%	0.02%	2.93%	0.01%
GPC UN Equity	GENUINE PARTS CO	0.07%	10.33%	0.01%	3.59%	0.00%
GNW UN Equity	GENWORTH FINANCIAL INC-CL A	0.06%	14.05%	0.01%	0.00%	0.00%
GENZ UW Equity	GENZYME CORP	0.17%	19.39%	0.03%	0.00%	0.00%
GILD UW Equity	GILEAD SCIENCES INC	0.28%	14.00%	0.04%	0.00%	0.00%
GS UN Equity	GOLDMAN SACHS GROUP INC	0.73%	7.41%	0.05%	0.91%	0.01%
GR UN Equity	GOODRICH CORP	0.09%	7.33%	0.01%	1.38%	0.00%
GT UN Equity	GOODYEAR TIRE & RUBBER CO	0.03%	21.60%	0.01%	0.00%	0.00%
GOOG UW Equity	GOOGLE INC-CL A	1.23%	17.70%	0.22%	0.00%	0.00%
HRB UN Equity	H&R BLOCK INC	0.04%	10.00%	0.00%	4.26%	0.00%
HAL UN Equity	HALLIBURTON CO	0.29%	10.10%	0.03%	1.02%	0.00%
HOG UN Equity	HARLEY-DAVIDSON INC	0.07%	9.33%	0.01%	1.24%	0.00%
HAR UN Equity	HARMAN INTERNATIONAL	0.02%	20.00%	0.00%	0.00%	0.00%
HRS UN Equity	HARRIS CORP	0.05%	5.50%	0.00%	1.32%	0.00%
HIG UN Equity	HARTFORD FINANCIAL SVCS GRP	0.10%	13.75%	0.01%	0.80%	0.00%
HAS UN Equity	HASBRO INC	0.06%	14.33%	0.01%	2.16%	0.00%
HCP UN Equity	HCP INC	0.10%	7.57%	0.01%	5.05%	0.01%
HCN UN Equity	HEALTH CARE REIT INC	0.06%	7.24%	0.00%	5.55%	0.00%
HP UN Equity	HELMERICH & PAYNE	0.04%	10.00%	0.00%	0.45%	0.00%
HSY UN Equity	HERSHEY CO/THE	0.08%	8.50%	0.01%	2.54%	0.00%
HES UN Equity	HESS CORP	0.19%	10.68%	0.02%	0.63%	0.00%
HPQ UN Equity	HEWLETT-PACKARD CO	0.87%	11.00%	0.10%	0.83%	0.01%
HNZ UN Equity	HJ HEINZ CO	0.14%	7.12%	0.01%	3.70%	0.01%
HD UN Equity	HOME DEPOT INC	0.48%	14.43%	0.07%	3.06%	0.01%
HON UN Equity	HONEYWELL INTERNATIONAL INC	0.33%	10.52%	0.03%	2.58%	0.01%
HRL UN Equity	HORMEL FOODS CORP	0.05%	11.00%	0.01%	1.88%	0.00%
HSP UN Equity	HOSPIRA INC	0.09%	12.80%	0.01%	0.00%	0.00%
HST UN Equity	HOST HOTELS & RESORTS INC	0.10%	11.60%	0.01%	0.28%	0.00%
HCBK UW Equity	HUDSON CITY BANCORP INC	0.06%	4.50%	0.00%	5.05%	0.00%
HUM UN Equity	HUMANA INC	0.08%	10.00%	0.01%	0.00%	0.00%
HBAN UW Equity	HUNTINGTON BANCSHARES INC	0.04%	4.67%	0.00%	0.67%	0.00%
IBM UN Equity	INTL BUSINESS MACHINES CORP	1.63%	10.54%	0.17%	1.65%	0.03%
ITW UN Equity	ILLINOIS TOOL WORKS	0.23%	15.06%	0.03%	2.65%	0.01%
TEG UN Equity	INTEGRYS ENERGY GROUP INC	0.04%	8.27%	0.00%	5.20%	0.00%
INTC UW Equity	INTEL CORP	1.00%	11.29%	0.11%	3.19%	0.03%
ICE UN Equity	INTERCONTINENTALEXCHANGE INC	0.08%	17.75%	0.01%	0.00%	0.00%
IPG UN Equity	INTERPUBLIC GROUP OF COS INC	0.05%	12.00%	0.01%	0.00%	0.00%
IFF UN Equity	INTL FLAVORS & FRAGRANCES	0.04%	9.00%	0.00%	2.08%	0.00%
IGT UN Equity	INTL GAME TECHNOLOGY	0.04%	13.80%	0.01%	1.62%	0.00%
IP UN Equity	INTERNATIONAL PAPER CO	0.09%	5.50%	0.01%	1.74%	0.00%
INTU UW Equity	INTUIT INC	0.14%	14.95%	0.02%	0.00%	0.00%
ISRG UW Equity	INTUITIVE SURGICAL INC	0.10%	26.40%	0.03%	0.00%	0.00%
IVZ UN Equity	INVESCO LTD	0.10%	9.65%	0.01%	1.88%	0.00%
IRM UN Equity	IRON MOUNTAIN INC	0.04%	18.00%	0.01%	1.04%	0.00%
ITT UN Equity	ITT CORP	0.08%	11.33%	0.01%	2.07%	0.00%
JCP UN Equity	J.C. PENNEY CO INC	0.07%	9.67%	0.01%	2.45%	0.00%
JBL UN Equity	JABIL CIRCUIT INC	0.03%	11.00%	0.00%	1.91%	0.00%
JEC UN Equity	JACOBS ENGINEERING GROUP INC	0.05%	11.00%	0.01%	0.00%	0.00%
JNS UN Equity	JANUS CAPITAL GROUP INC	0.02%	2.80%	0.00%	0.34%	0.00%
JDSU UW Equity	JDS UNIPHASE CORP	0.03%	12.25%	0.00%	0.00%	0.00%
SJM UN Equity	JM SMUCKER CO/THE	0.07%	7.03%	0.00%	2.57%	0.00%
JCI UN Equity	JOHNSON CONTROLS INC	0.20%	15.53%	0.03%	1.65%	0.00%
JNJ UN Equity	JOHNSON & JOHNSON	1.61%	6.63%	0.11%	3.29%	0.05%
JPM UN Equity	JPMORGAN CHASE & CO	1.45%	8.50%	0.12%	0.67%	0.01%
JNPR UN Equity	JUNIPER NETWORKS INC	0.15%	17.69%	0.03%	0.00%	0.00%
K UN Equity	KELLOGG CO	0.18%	9.17%	0.02%	3.05%	0.01%
KEY UN Equity	KEYCORP	0.07%	4.75%	0.00%	0.45%	0.00%
KMB UN Equity	KIMBERLY-CLARK CORP	0.25%	8.27%	0.02%	3.87%	0.01%
KIM UN Equity	KIMCO REALTY CORP	0.06%	9.50%	0.01%	3.76%	0.00%
KG UN Equity	KING PHARMACEUTICALS INC	0.03%	11.92%	0.00%	0.00%	0.00%
KLAC UW Equity	KLA-TENCOR CORPORATION	0.05%	10.50%	0.01%	2.88%	0.00%
KSS UN Equity	KOHLS CORP	0.15%	13.78%	0.02%	0.00%	0.00%
KFT UN Equity	KRAFT FOODS INC-CLASS A	0.50%	7.30%	0.04%	3.75%	0.02%
KR UN Equity	KROGER CO	0.13%	8.92%	0.01%	1.80%	0.00%
LLL UN Equity	L-3 COMMUNICATIONS HOLDINGS	0.07%	8.69%	0.01%	2.19%	0.00%
LH UN Equity	LABORATORY CRP OF AMER HLDGS	0.08%	12.50%	0.01%	0.00%	0.00%
LM UN Equity	LEGG MASON INC	0.04%	7.50%	0.00%	0.49%	0.00%
LEG UN Equity	LEGGETT & PLATT INC	0.03%	4.70%	0.00%	4.33%	0.00%
LEN UN Equity	LENNAR CORP-CL A	0.02%	8.00%	0.00%	1.00%	0.00%
LUK UN Equity	LEUCADIA NATIONAL CORP	0.06%	No Long-Term Growth		0.00%	0.00%
LXK UN Equity	LEXMARK INTERNATIONAL INC-A	0.03%	No Long-Term Growth		0.00%	0.00%
LIFE UW Equity	LIFE TECHNOLOGIES CORP	0.08%	10.18%	0.01%	0.00%	0.00%
LTD UN Equity	LIMITED BRANDS INC	0.09%	14.86%	0.01%	5.38%	0.00%
LNC UN Equity	LINCOLN NATIONAL CORP	0.07%	10.80%	0.01%	0.16%	0.00%
LLTC UW Equity	LINEAR TECHNOLOGY CORP	0.06%	9.67%	0.01%	3.16%	0.00%

LMT UN Equity	LOCKHEED MARTIN CORP	0.24%	8.07%	0.02%	3.67%	0.01%
L UN Equity	LOEWS CORP	0.15%	No Long-Term Growth		0.63%	0.00%
LO UN Equity	LORILLARD INC	0.11%	6.00%	0.01%	5.26%	0.01%
LOW UN Equity	LOWE'S COS INC	0.28%	14.24%	0.04%	1.76%	0.00%
LSI UN Equity	LSI CORP	0.03%	15.00%	0.00%	0.00%	0.00%
MTB UN Equity	M & T BANK CORP	0.08%	4.95%	0.00%	3.61%	0.00%
M UN Equity	MACY'S INC	0.09%	10.00%	0.01%	0.82%	0.00%
MRO UN Equity	MARATHON OIL CORP	0.23%	12.02%	0.03%	2.77%	0.01%
MAR UN Equity	MARRIOTT INTERNATIONAL-CL A	0.12%	10.53%	0.01%	0.44%	0.00%
MMC UN Equity	MARSH & MCLENNAN COS	0.12%	11.00%	0.01%	3.44%	0.00%
MI UN Equity	MARSHALL & ILSLEY CORP	0.04%	6.33%	0.00%	0.49%	0.00%
MAS UN Equity	MASCO CORP	0.04%	10.00%	0.00%	2.41%	0.00%
MEE UN Equity	MASSEY ENERGY CO	0.03%	112.00%	0.04%	0.71%	0.00%
MA UN Equity	MASTERCARD INC-CLASS A	0.24%	19.47%	0.05%	0.27%	0.00%
MAT UW Equity	MATTEL INC	0.08%	8.50%	0.01%	3.42%	0.00%
MFE UN Equity	MCAFEE INC	0.07%	13.13%	0.01%	0.00%	0.00%
MKC UN Equity	MCCORMICK & CO-NON VTG SHRS	0.05%	8.83%	0.00%	2.39%	0.00%
MCD UN Equity	MCDONALD'S CORP	0.74%	9.58%	0.07%	3.00%	0.02%
MHP UN Equity	MCGRAW-HILL COMPANIES INC	0.10%	9.00%	0.01%	2.98%	0.00%
MCK UN Equity	MCKESSON CORP	0.15%	11.00%	0.02%	0.92%	0.00%
MJN UN Equity	MEAD JOHNSON NUTRITION CO	0.11%	10.25%	0.01%	1.45%	0.00%
MWV UN Equity	MEADWESTVACO CORP	0.04%	10.00%	0.00%	3.67%	0.00%
MHS UN Equity	MEDCO HEALTH SOLUTIONS INC	0.21%	16.67%	0.03%	0.05%	0.00%
MDT UN Equity	MEDTRONIC INC	0.33%	10.04%	0.03%	2.69%	0.01%
WFR UN Equity	MEMC ELECTRONIC MATERIALS	0.03%	17.50%	0.00%	0.00%	0.00%
MRK UN Equity	MERCK & CO. INC.	1.05%	6.73%	0.07%	4.09%	0.04%
MDP UN Equity	MEREDITH CORP	0.01%	15.00%	0.00%	2.65%	0.00%
MET UN Equity	METLIFE INC	0.33%	10.58%	0.03%	1.91%	0.01%
PCS UN Equity	METROPCS COMMUNICATIONS INC	0.04%	20.82%	0.01%	0.00%	0.00%
MCHP UW Equity	MICROCHIP TECHNOLOGY INC	0.05%	15.00%	0.01%	4.43%	0.00%
MU UW Equity	MICRON TECHNOLOGY INC	0.07%	11.75%	0.01%	0.00%	0.00%
MSFT UW Equity	MICROSOFT CORP	1.98%	11.88%	0.24%	2.26%	0.04%
MOLX UW Equity	MOLEX INC	0.02%	11.67%	0.00%	2.90%	0.00%
TAP UN Equity	MOLSON COORS BREWING CO -B	0.07%	12.00%	0.01%	2.18%	0.00%
MON UN Equity	MONSANTO CO	0.27%	11.00%	0.03%	2.11%	0.01%
MWW UN Equity	MONSTER WORLDWIDE INC	0.02%	20.20%	0.00%	0.00%	0.00%
MCO UN Equity	MOODY'S CORP	0.06%	11.05%	0.01%	1.44%	0.00%
MS UN Equity	MORGAN STANLEY	0.33%	12.00%	0.04%	0.78%	0.00%
MOT UN Equity	MOTOROLA INC	0.17%	12.50%	0.02%	0.00%	0.00%
MUR UN Equity	MURPHY OIL CORP	0.11%	15.00%	0.02%	1.61%	0.00%
MYL UW Equity	MYLAN INC	0.05%	13.70%	0.01%	1.65%	0.00%
NBR UN Equity	NABORS INDUSTRIES LTD	0.05%	10.00%	0.01%	0.00%	0.00%
NDAQ UW Equity	NASDAQ OMX GROUP/THE	0.04%	12.25%	0.00%	0.00%	0.00%
NOV UN Equity	NATIONAL OILWELL VARCO INC	0.19%	No Long-Term Growth		0.81%	0.00%
NSM UN Equity	NATIONAL SEMICONDUCTOR CORP	0.03%	8.00%	0.00%	2.88%	0.00%
NTAP UW Equity	NETAPP INC	0.16%	17.50%	0.03%	0.00%	0.00%
NYT UN Equity	NEW YORK TIMES CO -CL A	0.01%	12.00%	0.00%	0.00%	0.00%
NWL UN Equity	NEWELL RUBBERMAID INC	0.05%	9.20%	0.00%	1.23%	0.00%
NEM UN Equity	NEWMONT MINING CORP	0.28%	24.43%	0.07%	0.85%	0.00%
NWSA UW Equity	NEWS CORP-CL A	0.24%	10.53%	0.02%	1.06%	0.00%
NEE UN Equity	NEXTERA ENERGY INC	0.21%	6.05%	0.01%	3.61%	0.01%
GAS UN Equity	NICOR INC	0.02%	3.13%	0.00%	3.89%	0.00%
NKE UN Equity	NIKE INC -CL B	0.29%	12.03%	0.03%	1.37%	0.00%
NI UN Equity	NISOURCE INC	0.05%	7.17%	0.00%	5.25%	0.00%
NBL UN Equity	NOBLE ENERGY INC	0.12%	7.00%	0.01%	0.94%	0.00%
JWN UN Equity	NORDSTROM INC	0.08%	12.19%	0.01%	1.88%	0.00%
NSC UN Equity	NORFOLK SOUTHERN CORP	0.21%	13.75%	0.03%	2.29%	0.00%
NU UN Equity	NORTHEAST UTILITIES	0.05%	7.17%	0.00%	3.36%	0.00%
NTRS UW Equity	NORTHERN TRUST CORP	0.11%	6.14%	0.01%	2.25%	0.00%
NOC UN Equity	NORTHROP GRUMMAN CORP	0.17%	10.89%	0.02%	2.89%	0.00%
NOVL UW Equity	NOVELL INC	0.02%	8.33%	0.00%	0.00%	0.00%
NVLS UW Equity	NOVELLUS SYSTEMS INC	0.02%	14.00%	0.00%	0.00%	0.00%
NRG UN Equity	NRG ENERGY INC	0.05%	3.50%	0.00%	0.00%	0.00%
NUE UN Equity	NUCOR CORP	0.12%	No Long-Term Growth		3.48%	0.00%
NVDA UW Equity	NVIDIA CORP	0.06%	13.00%	0.01%	0.00%	0.00%
NYX UN Equity	NYSE EURONEXT	0.07%	9.70%	0.01%	4.16%	0.00%
ORLY UW Equity	O'REILLY AUTOMOTIVE INC	0.07%	16.50%	0.01%	0.00%	0.00%
OXY UN Equity	OCCIDENTAL PETROLEUM CORP	0.63%	7.88%	0.05%	1.55%	0.01%
ODP UN Equity	OFFICE DEPOT INC	0.01%	10.67%	0.00%	0.00%	0.00%
OMC UN Equity	OMNICOM GROUP	0.11%	11.00%	0.01%	1.93%	0.00%
OKE UN Equity	ONEOK INC	0.05%	6.00%	0.00%	3.64%	0.00%
ORCL UW Equity	ORACLE CORP	1.31%	14.84%	0.19%	0.80%	0.01%
OI UN Equity	OWENS-ILLINOIS INC	0.04%	7.20%	0.00%	0.00%	0.00%
PCAR UW Equity	PACCAR INC	0.17%	11.80%	0.02%	0.72%	0.00%
PTV UN Equity	PACTIV CORPORATION	0.04%	6.55%	0.00%	0.00%	0.00%
PLL UN Equity	PALL CORP	0.05%	12.00%	0.01%	1.44%	0.00%
PH UN Equity	PARKER HANNIFIN CORP	0.11%	8.50%	0.01%	1.49%	0.00%
PDCO UW Equity	PATTERSON COS INC	0.03%	14.33%	0.00%	1.41%	0.00%
PAYX UW Equity	PAYCHEX INC	0.09%	11.00%	0.01%	4.53%	0.00%
BTU UN Equity	PEABODY ENERGY CORP	0.13%	34.00%	0.04%	0.54%	0.00%
PBCT UW Equity	PEOPLE'S UNITED FINANCIAL	0.05%	7.67%	0.00%	4.65%	0.00%
POM UN Equity	PEPCO HOLDINGS INC	0.04%	6.50%	0.00%	5.68%	0.00%
PEP UN Equity	PEPSICO INC	0.96%	10.50%	0.10%	2.86%	0.03%
PKI UN Equity	PERKINELMER INC	0.03%	13.65%	0.00%	1.19%	0.00%
PFE UN Equity	PFIZER INC	1.30%	3.10%	0.04%	4.06%	0.05%
PCG UN Equity	P G & E CORP	0.17%	7.03%	0.01%	3.86%	0.01%
PM UN Equity	PHILIP MORRIS INTERNATIONAL	0.96%	9.97%	0.10%	4.29%	0.04%
PNW UN Equity	PINNACLE WEST CAPITAL	0.04%	5.83%	0.00%	5.12%	0.00%
PXD UN Equity	PIONEER NATURAL RESOURCES CO	0.08%	10.67%	0.01%	0.19%	0.00%
PBI UN Equity	PITNEY BOWES INC	0.04%	No Long-Term Growth		6.60%	0.00%
PCL UN Equity	PLUM CREEK TIMBER CO	0.06%	3.50%	0.00%	4.51%	0.00%
PNC UN Equity	PNC FINANCIAL SERVICES GROUP	0.26%	4.88%	0.01%	0.75%	0.00%
RL UN Equity	POLO RALPH LAUREN CORP	0.06%	13.50%	0.01%	0.35%	0.00%
PPG UN Equity	PPG INDUSTRIES INC	0.11%	7.50%	0.01%	2.89%	0.00%
PPL UN Equity	PPL CORPORATION	0.12%	5.06%	0.01%	5.07%	0.01%
PX UN Equity	PRAXAIR INC	0.26%	11.00%	0.03%	1.96%	0.01%
PCP UN Equity	PRECISION CASTPARTS CORP	0.17%	9.65%	0.02%	0.10%	0.00%
PCLN UW Equity	PRICELINE.COM INC	0.15%	20.67%	0.03%	0.00%	0.00%
PFG UN Equity	PRINCIPAL FINANCIAL GROUP	0.08%	12.17%	0.01%	1.92%	0.00%

PG UN Equity	PROCTER & GAMBLE CO/THE	1.62%	9.30%	0.15%	3.13%	0.05%
PGN UN Equity	PROGRESS ENERGY INC	0.12%	3.76%	0.00%	5.62%	0.01%
PGR UN Equity	PROGRESSIVE CORP	0.13%	6.79%	0.01%	1.21%	0.00%
PLD UN Equity	PROLOGIS	0.06%	18.23%	0.01%	4.71%	0.00%
PRU UN Equity	PRUDENTIAL FINANCIAL INC	0.23%	12.18%	0.03%	1.44%	0.00%
PEG UN Equity	PUBLIC SERVICE ENTERPRISE GP	0.15%	1.25%	0.00%	4.12%	0.01%
PSA UN Equity	PUBLIC STORAGE	0.16%	3.54%	0.01%	3.02%	0.00%
PHM UN Equity	PULTE GROUP INC	0.03%	10.00%	0.00%	0.04%	0.00%
QEP UN Equity	QEP RESOURCES INC	0.05%	15.00%	0.01%	0.15%	0.00%
QLGC UW Equity	QLOGIC CORP	0.02%	11.50%	0.00%	0.00%	0.00%
QCOM UW Equity	QUALCOMM INC	0.66%	15.50%	0.10%	1.67%	0.01%
PWR UN Equity	QUANTA SERVICES INC	0.04%	13.85%	0.01%	0.00%	0.00%
DGX UN Equity	QUEST DIAGNOSTICS	0.08%	11.95%	0.01%	0.81%	0.00%
Q UN Equity	QWEST COMMUNICATIONS INTL	0.10%	5.20%	0.01%	5.00%	0.01%
RSH UN Equity	RADIOSHACK CORP	0.02%	8.80%	0.00%	1.16%	0.00%
RRC UN Equity	RANGE RESOURCES CORP	0.05%	15.75%	0.01%	0.42%	0.00%
RTN UN Equity	RAYTHEON COMPANY	0.16%	8.71%	0.01%	3.16%	0.00%
RHT UN Equity	RED HAT INC	0.07%	18.14%	0.01%	0.00%	0.00%
RF UN Equity	REGIONS FINANCIAL CORP	0.09%	7.00%	0.01%	0.53%	0.00%
RSG UN Equity	REPUBLIC SERVICES INC	0.11%	13.00%	0.01%	2.43%	0.00%
RAI UN Equity	REYNOLDS AMERICAN INC	0.16%	6.00%	0.01%	6.09%	0.01%
RHI UN Equity	ROBERT HALF INTL INC	0.04%	16.50%	0.01%	1.93%	0.00%
ROK UN Equity	ROCKWELL AUTOMATION INC	0.08%	22.28%	0.02%	2.15%	0.00%
COL UN Equity	ROCKWELL COLLINS INC.	0.09%	8.55%	0.01%	1.69%	0.00%
ROP UN Equity	ROPER INDUSTRIES INC	0.06%	13.50%	0.01%	0.56%	0.00%
ROST UW Equity	ROSS STORES INC	0.06%	14.00%	0.01%	1.18%	0.00%
RDC UN Equity	ROWAN COMPANIES INC	0.03%	13.00%	0.00%	0.00%	0.00%
RRD UW Equity	RR DONNELLEY & SONS CO	0.03%	10.00%	0.00%	5.78%	0.00%
R UN Equity	RYDER SYSTEM INC	0.02%	14.85%	0.00%	2.29%	0.00%
SWY UN Equity	SAFEWAY INC	0.07%	8.55%	0.01%	2.09%	0.00%
SAI UN Equity	SAIC INC	0.05%	10.20%	0.01%	0.00%	0.00%
CRM UN Equity	SALESFORCE.COM INC	0.13%	28.93%	0.04%	0.00%	0.00%
SNDK UW Equity	SANDISK CORP	0.09%	14.33%	0.01%	0.00%	0.00%
SLE UN Equity	SARA LEE CORP	0.09%	9.62%	0.01%	3.04%	0.00%
SCG UN Equity	SCANA CORP	0.05%	4.88%	0.00%	4.66%	0.00%
SLB UN Equity	SCHLUMBERGER LTD	0.80%	15.96%	0.13%	1.33%	0.01%
SCHW UN Equity	SCHWAB (CHARLES) CORP	0.15%	13.00%	0.02%	1.72%	0.00%
SNI UN Equity	SCRIPPS NETWORKS INTER-CL A	0.06%	14.66%	0.01%	0.64%	0.00%
SEE UN Equity	SEALED AIR CORP	0.03%	6.00%	0.00%	1.71%	0.00%
SHLD UW Equity	SEARS HOLDINGS CORP	0.08%	10.00%	0.01%	0.00%	0.00%
SRE UN Equity	SEMPRA ENERGY	0.12%	6.50%	0.01%	2.94%	0.00%
SHW UN Equity	SHERWIN-WILLIAMS CO/THE	0.07%	7.15%	0.01%	1.97%	0.00%
SIAL UW Equity	SIGMA-ALDRICH	0.07%	9.00%	0.01%	1.04%	0.00%
SPG UN Equity	SIMON PROPERTY GROUP INC	0.26%	5.19%	0.01%	2.49%	0.01%
SLM UN Equity	SLM CORP	0.05%	10.00%	0.01%	0.00%	0.00%
SNA UN Equity	SNAP-ON INC	0.03%	10.00%	0.00%	0.00%	0.00%
SO UN Equity	SOUTHERN CO	0.29%	4.86%	0.01%	4.82%	0.01%
LUV UN Equity	SOUTHWEST AIRLINES CO	0.09%	8.33%	0.01%	0.11%	0.00%
SWN UN Equity	SOUTHWESTERN ENERGY CO	0.11%	26.00%	0.03%	0.00%	0.00%
SE UN Equity	SPECTRA ENERGY CORP	0.14%	6.67%	0.01%	4.21%	0.01%
S UN Equity	SPRINT NEXTEL CORP	0.12%	4.50%	0.01%	0.00%	0.00%
STJ UN Equity	ST JUDE MEDICAL INC	0.12%	12.28%	0.01%	0.00%	0.00%
SWK UN Equity	STANLEY BLACK & DECKER INC	0.10%	14.00%	0.01%	2.09%	0.00%
SPLS UW Equity	STAPLES INC	0.14%	14.73%	0.02%	1.79%	0.00%
SBUX UW Equity	STARBUCKS CORP	0.18%	15.74%	0.03%	1.98%	0.00%
HOT UN Equity	STARWOOD HOTELS & RESORTS	0.10%	16.00%	0.02%	0.50%	0.00%
STT UN Equity	STATE STREET CORP	0.18%	7.96%	0.01%	0.21%	0.00%
SRCL UW Equity	STERICYCLE INC	0.06%	17.80%	0.01%	0.00%	0.00%
SYK UN Equity	STRYKER CORP	0.18%	12.76%	0.02%	1.18%	0.00%
SUN UN Equity	SUNOCO INC	0.04%	0.71%	0.00%	1.49%	0.00%
STI UN Equity	SUNTRUST BANKS INC	0.12%	8.00%	0.01%	0.15%	0.00%
SVU UN Equity	SUPERVALU INC	0.02%	No Long-Term Growth		3.04%	0.00%
SYMC UW Equity	SYMANTEC CORP	0.11%	9.25%	0.01%	0.00%	0.00%
SYY UN Equity	SYSCO CORP	0.15%	10.50%	0.02%	3.71%	0.01%
TROW UW Equity	T ROWE PRICE GROUP INC	0.12%	10.80%	0.01%	2.03%	0.00%
TGT UN Equity	TARGET CORP	0.36%	13.48%	0.05%	1.49%	0.01%
TE UN Equity	TECO ENERGY INC	0.03%	7.30%	0.00%	4.62%	0.00%
TLAB UW Equity	TELLABS INC	0.03%	10.33%	0.00%	1.04%	0.00%
THC UN Equity	TENET HEALTHCARE CORP	0.02%	8.25%	0.00%	0.00%	0.00%
TDC UN Equity	TERADATA CORP	0.06%	11.00%	0.01%	0.00%	0.00%
TER UN Equity	TERADYNE INC	0.02%	15.00%	0.00%	0.00%	0.00%
TSO UN Equity	TESORO CORP	0.02%	24.94%	0.00%	0.00%	0.00%
TXN UN Equity	TEXAS INSTRUMENTS INC	0.31%	10.67%	0.03%	1.71%	0.01%
TXT UN Equity	TEXTRON INC	0.05%	51.68%	0.03%	0.38%	0.00%
TMO UN Equity	THERMO FISHER SCIENTIFIC INC	0.18%	11.53%	0.02%	0.00%	0.00%
TIF UN Equity	TIFFANY & CO	0.06%	13.72%	0.01%	1.75%	0.00%
TWC UN Equity	TIME WARNER CABLE	0.18%	13.96%	0.03%	2.82%	0.01%
TWX UN Equity	TIME WARNER INC	0.32%	14.51%	0.05%	2.72%	0.01%
TIE UN Equity	TITANIUM METALS CORP	0.03%	15.00%	0.01%	0.72%	0.00%
TJX UN Equity	TJX COMPANIES INC	0.16%	14.00%	0.02%	1.30%	0.00%
TMK UN Equity	TORCHMARK CORP	0.04%	7.33%	0.00%	1.11%	0.00%
TSS UN Equity	TOTAL SYSTEM SERVICES INC	0.03%	9.67%	0.00%	1.79%	0.00%
TRV UN Equity	TRAVELERS COS INC/THE	0.23%	7.44%	0.02%	2.62%	0.01%
TYC UN Equity	TYCO INTERNATIONAL LTD	0.17%	12.28%	0.02%	2.50%	0.00%
TSN UN Equity	TYSON FOODS INC-CL A	0.04%	8.50%	0.00%	1.07%	0.00%
UNP UN Equity	UNION PACIFIC CORP	0.39%	14.87%	0.06%	1.45%	0.01%
UPS UN Equity	UNITED PARCEL SERVICE-CL B	0.45%	13.26%	0.06%	2.74%	0.01%
UTX UN Equity	UNITED TECHNOLOGIES CORP	0.63%	10.93%	0.07%	2.30%	0.01%
UNH UN Equity	UNITEDHEALTH GROUP INC	0.36%	12.25%	0.04%	0.89%	0.00%
UNM UN Equity	UNUM GROUP	0.07%	9.33%	0.01%	1.53%	0.00%
URBN UW Equity	URBAN OUTFITTERS INC	0.05%	20.27%	0.01%	0.00%	0.00%
USB UN Equity	US BANCORP	0.40%	6.67%	0.03%	0.87%	0.00%
X UN Equity	UNITED STATES STEEL CORP	0.06%	5.00%	0.00%	0.45%	0.00%
VLO UN Equity	VALERO ENERGY CORP	0.10%	23.42%	0.02%	1.07%	0.00%
VAR UN Equity	VARIAN MEDICAL SYSTEMS INC	0.07%	16.67%	0.01%	0.00%	0.00%
VTR UN Equity	VENTAS INC	0.08%	5.45%	0.00%	3.95%	0.00%
VRSN UW Equity	VERISIGN INC	0.05%	10.00%	0.01%	0.00%	0.00%
VZ UN Equity	VERIZON COMMUNICATIONS INC	0.84%	3.87%	0.03%	5.93%	0.05%
VFC UN Equity	VF CORP	0.08%	11.00%	0.01%	2.83%	0.00%

VIA/B UN Equity	VIACOM INC-CLASS B	0.19%	11.33%	0.02%	1.59%	0.00%
V UN Equity	VISA INC-CLASS A SHARES	0.34%	20.57%	0.07%	0.69%	0.00%
VNO UN Equity	VORNADO REALTY TRUST	0.15%	6.25%	0.01%	2.95%	0.00%
VMC UN Equity	VULCAN MATERIALS CO	0.04%	8.50%	0.00%	2.76%	0.00%
WMT UN Equity	WAL-MART STORES INC	1.80%	11.04%	0.20%	2.23%	0.04%
WAG UN Equity	WALGREEN CO	0.31%	14.38%	0.04%	1.94%	0.01%
DIS UN Equity	WALT DISNEY CO/THE	0.61%	10.69%	0.07%	1.09%	0.01%
WPO UN Equity	WASHINGTON POST-CLASS B	0.03%	No Long-Term Growth		0.00%	0.00%
WM UN Equity	WASTE MANAGEMENT INC	0.16%	10.50%	0.02%	3.35%	0.01%
WAT UN Equity	WATERS CORP	0.06%	12.50%	0.01%	0.00%	0.00%
WPI UN Equity	WATSON PHARMACEUTICALS INC	0.05%	9.40%	0.00%	0.00%	0.00%
WLP UN Equity	WELLPOINT INC	0.21%	11.00%	0.02%	0.00%	0.00%
WFC UN Equity	WELLS FARGO & CO	1.25%	4.08%	0.05%	0.80%	0.01%
WDC UN Equity	WESTERN DIGITAL CORP	0.06%	7.50%	0.00%	0.00%	0.00%
WU UN Equity	WESTERN UNION CO	0.11%	11.79%	0.01%	1.40%	0.00%
WY UN Equity	WEYERHAEUSER CO	0.08%	5.50%	0.00%	1.21%	0.00%
WHR UN Equity	WHIRLPOOL CORP	0.06%	15.00%	0.01%	2.00%	0.00%
WFMI UW Equity	WHOLE FOODS MARKET INC	0.06%	19.50%	0.01%	0.00%	0.00%
WMB UN Equity	WILLIAMS COS INC	0.12%	12.97%	0.01%	2.28%	0.00%
WIN UW Equity	WINDSTREAM CORP	0.05%	0.45%	0.00%	8.14%	0.00%
WEC UN Equity	WISCONSIN ENERGY CORP	0.06%	8.00%	0.00%	2.75%	0.00%
GWW UN Equity	WW GRAINGER INC	0.08%	13.62%	0.01%	1.64%	0.00%
WYN UN Equity	WYNDHAM WORLDWIDE CORP	0.05%	5.20%	0.00%	1.65%	0.00%
WYNN UW Equity	WYNN RESORTS LTD	0.11%	15.51%	0.02%	0.77%	0.00%
XEL UN Equity	XCEL ENERGY INC	0.10%	6.17%	0.01%	4.30%	0.00%
XRX UN Equity	XEROX CORP	0.14%	7.00%	0.01%	1.58%	0.00%
XLNX UW Equity	XILINX INC	0.06%	17.00%	0.01%	2.43%	0.00%
XL UN Equity	XL GROUP PLC	0.07%	No Long-Term Growth		1.64%	0.00%
YHOO UW Equity	YAHOO! INC	0.18%	10.77%	0.02%	0.00%	0.00%
YUM UN Equity	YUM! BRANDS INC	0.20%	12.38%	0.03%	1.82%	0.00%
ZMH UN Equity	ZIMMER HOLDINGS INC	0.09%	11.11%	0.01%	0.00%	0.00%
ZION UW Equity	ZIONS BANCORPORATION	0.04%	7.67%	0.00%	0.18%	0.00%

Beta Analysis

Date	AGL Price	AGL Weekly Return	AGL Covar.	ATO Price	ATO Weekly Return	ATO Covar.	LG Price	LG Weekly Return	LG Covar.	GAS Price	GAS Weekly Return	GAS Covar.	NJR Price	NJR Weekly Return	NJR Covar.
10/8/2010	38.88	0.15%	0.0468%	29.34	-0.20%	0.0492%	35.13	0.83%	0.0420%	47.79	2.97%	0.0578%	40.03	1.29%	0.0447%
10/1/2010	38.82	1.49%	0.0496%	29.40	1.59%	0.0529%	34.84	1.84%	0.0428%	46.41	2.45%	0.0610%	39.52	1.54%	0.0456%
9/24/2010	38.25	1.46%	0.0497%	28.94	1.58%	0.0536%	34.21	2.52%	0.0433%	45.30	2.49%	0.0630%	38.92	3.24%	0.0465%
9/17/2010	37.70	-0.89%	0.0498%	28.49	-1.04%	0.0538%	33.37	-1.94%	0.0438%	44.20	-0.38%	0.0627%	37.70	-1.41%	0.0464%
9/10/2010	38.04	-0.21%	0.0510%	28.79	-1.20%	0.0550%	34.03	-1.08%	0.0455%	44.37	0.07%	0.0643%	38.24	0.08%	0.0476%
9/3/2010	38.12	2.80%	0.0521%	29.14	0.90%	0.0561%	34.40	0.73%	0.0447%	44.34	2.71%	0.0641%	38.21	0.55%	0.0473%
8/27/2010	37.08	1.59%	0.0510%	28.88	0.63%	0.0559%	34.15	3.45%	0.0446%	43.17	2.54%	0.0633%	38.00	3.43%	0.0478%
8/20/2010	36.50	-1.93%	0.0511%	28.70	0.07%	0.0560%	33.01	-2.51%	0.0449%	42.10	-1.47%	0.0635%	36.74	-3.16%	0.0483%
8/13/2010	37.22	-4.52%	0.0514%	28.68	-2.94%	0.0561%	33.86	-3.06%	0.0464%	42.73	-4.17%	0.0644%	37.94	-0.71%	0.0483%
8/6/2010	38.98	2.58%	0.0477%	29.55	1.90%	0.0538%	34.93	-0.03%	0.0434%	44.59	1.83%	0.0609%	38.21	2.36%	0.0479%
7/30/2010	38.00	-2.24%	0.0474%	29.00	0.07%	0.0540%	34.94	0.40%	0.0416%	43.79	-0.02%	0.0601%	37.33	0.40%	0.0458%
7/23/2010	38.87	3.68%	0.0470%	28.98	3.43%	0.0541%	34.80	4.16%	0.0413%	43.80	4.76%	0.0599%	37.18	4.85%	0.0455%
7/16/2010	37.49	-0.24%	0.0494%	28.02	-1.30%	0.0553%	33.41	-2.11%	0.0431%	41.81	-1.37%	0.0618%	35.46	-3.25%	0.0456%
7/9/2010	37.58	4.97%	0.0537%	28.39	5.85%	0.0604%	34.13	4.28%	0.0468%	42.39	5.76%	0.0650%	36.65	5.10%	0.0505%
7/2/2010	35.80	-1.84%	0.0504%	26.82	-3.87%	0.0557%	32.73	-2.94%	0.0442%	40.08	-4.68%	0.0608%	34.87	-1.64%	0.0458%
6/25/2010	36.47	-3.82%	0.0483%	27.90	-2.69%	0.0518%	33.72	-1.32%	0.0422%	42.05	-2.07%	0.0568%	35.45	-2.93%	0.0450%
6/18/2010	37.92	3.83%	0.0451%	28.67	2.83%	0.0496%	34.17	4.05%	0.0413%	42.94	4.94%	0.0549%	36.52	4.91%	0.0425%
6/11/2010	36.52	2.24%	0.0434%	27.88	5.21%	0.0492%	32.84	0.40%	0.0411%	40.92	3.41%	0.0541%	34.81	1.43%	0.0392%
6/4/2010	35.72	-2.14%	0.0428%	26.50	-2.29%	0.0472%	32.71	-1.15%	0.0411%	39.57	-2.08%	0.0530%	34.32	-3.19%	0.0387%
5/28/2010	36.50	2.21%	0.0435%	27.12	1.19%	0.0469%	33.09	-1.22%	0.0435%	40.41	0.35%	0.0547%	35.45	0.25%	0.0391%
5/21/2010	35.71	-6.66%	0.0443%	26.80	-4.66%	0.0470%	33.50	-5.05%	0.0459%	40.27	-6.20%	0.0555%	35.36	-6.23%	0.0408%
5/14/2010	38.26	1.95%	0.0378%	28.11	2.85%	0.0425%	35.28	6.94%	0.0411%	42.93	6.37%	0.0494%	37.71	5.45%	0.0349%
5/7/2010	37.53	-5.01%	0.0433%	27.33	-7.61%	0.0481%	32.99	-3.20%	0.0454%	40.36	-7.24%	0.0534%	35.76	-5.22%	0.0376%
4/30/2010	39.51	0.61%	0.0330%	29.58	-1.33%	0.0375%	34.08	-3.46%	0.0347%	43.51	-2.31%	0.0458%	37.73	0.13%	0.0279%
4/23/2010	39.27	2.91%	0.0342%	29.98	2.60%	0.0377%	35.30	2.47%	0.0331%	44.54	3.20%	0.0444%	37.68	0.03%	0.0285%
4/16/2010	38.16	-0.24%	0.0327%	29.22	-0.38%	0.0373%	34.45	-0.14%	0.0334%	43.16	0.70%	0.0447%	37.67	-2.13%	0.0293%
4/9/2010	38.25	-1.75%	0.0327%	29.33	1.31%	0.0374%	34.50	1.32%	0.0328%	42.86	1.28%	0.0446%	38.49	1.18%	0.0285%
4/2/2010	38.93	2.45%	0.0324%	28.95	2.26%	0.0371%	34.05	1.82%	0.0318%	42.32	-0.45%	0.0440%	38.04	1.36%	0.0281%
3/26/2010	38.00	-0.16%	0.0328%	28.31	-2.21%	0.0359%	33.44	-3.38%	0.0331%	42.51	-2.14%	0.0441%	37.53	0.78%	0.0274%
3/19/2010	38.07	1.30%	0.0312%	28.95	0.52%	0.0376%	34.61	2.67%	0.0334%	43.44	2.53%	0.0448%	37.24	0.65%	0.0247%
3/12/2010	37.58	0.89%	0.0319%	28.80	0.70%	0.0386%	33.71	0.42%	0.0338%	42.37	-1.07%	0.0464%	37.00	-2.25%	0.0259%
3/5/2010	37.25	2.53%	0.0374%	28.60	4.15%	0.0449%	33.57	2.38%	0.0320%	42.83	2.83%	0.0530%	37.85	3.93%	0.0278%
2/26/2010	36.33	-0.52%	0.0545%	27.46	-1.15%	0.0520%	32.79	-0.88%	0.0396%	41.65	2.97%	0.0686%	36.42	-0.41%	0.0422%
2/19/2010	36.52	3.46%	0.0575%	27.78	2.93%	0.0585%	33.08	5.32%	0.0456%	40.45	3.82%	0.0637%	36.57	3.57%	0.0466%
2/12/2010	35.30	0.86%	0.0703%	26.99	-0.99%	0.0685%	31.41	-0.25%	0.0517%	38.96	-0.43%	0.0821%	35.31	1.49%	0.0543%
2/5/2010	35.00	-0.82%	0.0767%	27.26	-1.30%	0.0717%	31.49	-2.39%	0.0525%	39.13	-3.43%	0.0880%	34.79	-4.66%	0.0579%
1/29/2010	35.29	-0.82%	0.0840%	27.62	-1.81%	0.0763%	32.26	0.40%	0.0537%	40.52	1.00%	0.0919%	36.49	0.14%	0.0586%
1/22/2010	35.58	-2.28%	0.0835%	28.13	-1.85%	0.0748%	32.13	-2.16%	0.0517%	40.12	-3.51%	0.0915%	36.44	-1.41%	0.0576%
1/15/2010	36.41	1.22%	0.0824%	28.66	0.70%	0.0742%	32.84	-0.51%	0.0527%	41.58	0.12%	0.0888%	36.96	0.41%	0.0562%
1/8/2010	35.97	-1.37%	0.0830%	28.46	-3.20%	0.0727%	33.01	-2.25%	0.0532%	41.53	-1.35%	0.0890%	36.81	-1.58%	0.0525%
1/1/2010	36.47	-2.69%	0.0849%	29.40	-2.10%	0.0754%	33.77	-1.57%	0.0583%	42.10	-2.30%	0.0944%	37.40	-2.40%	0.0590%
12/25/2009	37.48	2.15%	0.0917%	30.03	2.32%	0.0771%	34.31	0.76%	0.0643%	43.09	1.03%	0.0964%	38.32	3.62%	0.0656%
12/18/2009	36.69	-0.03%	0.0913%	29.35	1.24%	0.0760%	34.05	0.53%	0.0628%	42.65	0.40%	0.0977%	36.98	0.24%	0.0653%
12/11/2009	36.70	2.54%	0.0911%	28.99	2.66%	0.0760%	33.87	3.36%	0.0624%	42.48	5.10%	0.0977%	36.89	0.60%	0.0655%
12/4/2009	35.79	3.44%	0.0913%	28.24	1.40%	0.0763%	32.77	4.03%	0.0628%	40.42	3.35%	0.0982%	36.67	3.85%	0.0656%
11/27/2009	34.60	2.40%	0.0940%	27.85	-0.82%	0.0781%	31.50	0.32%	0.0644%	39.11	1.40%	0.1031%	35.31	-0.25%	0.0661%
11/20/2009	33.79	-1.77%	0.1073%	28.08	-0.60%	0.0855%	31.40	0.61%	0.0662%	38.57	-1.00%	0.1166%	35.40	1.17%	0.0733%
11/13/2009	34.40	-2.44%	0.1097%	28.25	-1.91%	0.0729%	31.21	-0.29%	0.0550%	38.96	1.62%	0.1204%	34.99	-1.69%	0.0585%
11/6/2009	35.26	0.86%	0.1131%	28.80	3.41%	0.0812%	31.30	1.92%	0.0531%	38.34	3.40%	0.1293%	35.59	1.11%	0.0600%
10/30/2009	34.96	-4.17%	0.1167%	27.85	-2.89%	0.0821%	30.71	-3.00%	0.0550%	37.08	-0.48%	0.1337%	35.20	-2.28%	0.0618%
10/23/2009	36.48	-1.03%	0.1328%	28.68	-0.76%	0.0974%	31.66	-1.83%	0.0736%	37.26	-2.79%	0.1449%	36.02	-1.13%	0.0877%
10/16/2009	36.86	2.11%	0.1324%	28.90	0.00%	0.0944%	32.25	-0.06%	0.0629%	38.33	2.71%	0.1402%	36.43	1.17%	0.0831%
10/9/2009	36.10	3.62%	0.1345%	28.90	4.41%	0.0955%	32.27	1.16%	0.0729%	37.32	5.30%	0.1477%	36.01	1.67%	0.0857%
10/2/2009	34.84	0.23%	0.1907%	27.68	-1.49%	0.1763%	31.90	-1.09%	0.1380%	35.44	-4.01%	0.2002%	35.42	-1.94%	0.1406%
9/25/2009	34.76	-1.00%	0.1968%	28.10	-1.44%	0.1750%	32.25	-2.89%	0.1358%	36.92	-0.51%	0.2066%	36.12	-1.93%	0.1464%
9/18/2009	35.11	2.39%	0.1991%	28.51	2.11%	0.1759%	33.21	2.75%	0.1347%	37.11	3.57%	0.2078%	36.83	2.08%	0.1481%
9/11/2009	34.29	2.48%	0.1982%	27.92	2.53%	0.1751%	32.32	-1.73%	0.1338%	35.83	0.00%	0.2062%	36.08	-0.63%	0.1476%
9/4/2009	33.46	-2.22%	0.1976%	27.23	-1.09%	0.1745%	32.89	-1.11%	0.1356%	35.83	-2.74%	0.2072%	36.31	-2.97%	0.1490%
8/28/2009	34.22	-2.06%	0.1991%	27.53	-1.33%	0.1765%	33.26	-4.37%	0.1375%	36.84	-2.33%	0.2073%	37.42	0.75%	0.1507%
8/21/2009	34.94	1.72%	0.1993%	27.90	0.54%	0.1765%	34.78	4.66%	0.1382%	37.72	3.20%	0.2073%	37.14	1.28%	0.1506%
8/14/2009	34.35	0.82%	0.1986%	27.75	0.14%	0.1763%	33.23	3.49%	0.1357%	36.55	0.69%	0.2056%	36.67	-1.56%	0.1501%
8/7/2009	34.07	1.34%	0.1984%	27.71	2.03%	0.1763%	32.11	-4.35%	0.1362%	36.30	-0.38%	0.2061%	37.25	-3.50%	0.1504%
7/31/2009	33.62	-1.49%	0.1971%	27.16	0.63%	0.1758%	33.57	-3.00%	0.1412%	36.44	-1.01%	0.2105%	38.60	-2.72%	0.1535%
7/24/2009	34.13	6.42%	0.1974%	26.99	4.65%	0.1759%	34.61	5.94%	0.1422%	36.81	6.57%	0.2110%	39.68	4.28%	0.1542%
7/17/2009	32.07	3.89%	0.1919%	25.79	4.62%	0.1721%	32.67	3.58%	0.1372%	34.54	3.41%	0.2053%	38.05	4.53%	0.1510%
7/10/2009	30.87	-2.34%	0.1858%	24.65	-1.40%	0.1637%	31.54	-3.10%	0.1297%	33.40	-1.97%	0.1963%	36.40	-0.76%	0.1430%
7/3/2009	31.61	0.19%	0.1843%	25.00	-0.40%	0.1638%	32.55	-2.13%	0.1289%	34.07	-1.76%	0.1988%	36.68	-1.48%	0.1416%
6/26/2009	31.55	-0.13%	0.1849%	25.10	-0.20%	0.1635%	33.26	-0.66%	0.1284%	34.68	-0.32%	0.1983%	37.23	1.47%	0.1410%
6/19/2009	31.59	0.89%	0.1854%	25.15	-0.75%	0.1642%	33.48	-2.48%	0.1282%	34.79	-1.22%	0.1984%	36.69	2.54%	0.1434%
6/12/2009	31.31	2.42%	0.1856%	25.34	2.97%	0.1625%	34.33	2.39%	0.1259%	35.22	3.41%	0.1963%	35.78	1.91%	0.1436%
6/5/2009	30.57	5.71%	0.1846%	24.61	2.54%	0.1615%	33.53	7.88%	0.1253%	34.06	8.30%	0.1977%	35.11	5.53%	0.1432%
5/29/2009	28.92	1.62%	0.1809%	24.00	0.38%	0.1606%	31.08	4.30%	0.1206%	31.45	1.78%	0.1919%	33.27	2.91%	0.1401%
5/22/2009	28.46	-1.93%	0.1802%	23.91	-0.91%	0.1603%	29.80	-5.00%	0.1165%	30.90	-3.47%	0.1919%	32.33	3.49%	0.1373%
5/15/2009	29.02	-5.23%	0.1812%	24.13	-5.93%	0.1622%	31.37	-6.13%	0.1168%	32.01	-5.27%	0.1921%	31.24	-3.94%	0.1366%
5/8/2009	30.62	-2.52%	0.1770%	25.65	0.04%	0.1585%	33.42	-6.20%	0.1122%	33.79	3.02%	0.1888%	32.52	-2.14%	0.1352%
5/1/2009	31.41	9.98%	0.1795%	25.64	10.00%	0.1585%	35.63	3.76%	0.1191%	32.80	4.46%	0.1844%	33.23	6.34%	0.1381%
4/24/2009	28.56	5.31%	0.1754%	23.31	-0.77%	0.1546%	34.34	-4.88%	0.1195%	31.40	-4.09%	0.1856%	31.25	-3.16%	0.1351%
4/17/2009	27.12	1.57%	0.1748%	23.49	1.78%	0.1552%	36.10	-3.53%	0.1194%	32.74	-0.24%	0.1857%	32.27	-2.03%	0.1354%
4/10/2009	26.70	-2.38%	0.1788%	23.08	-0.39%	0.1603%	37.42	-4.10%	0.1226%	32.82	-2.03%	0.1908%	32.94	-1.61%	0.1420%
4/3/2009	27.35	1.71%	0.1798%	23.17	-1.91%	0.1613%	39.02	2.58%	0.1240%	33.50	0.69%	0.1921%	33.48	-1.03%	0.1429%
3/27/2009	26.89	-0.85%	0.1791%	23.62	2.21%	0.1679%	38.04	0.24%	0.1229%	33.27	1.31%	0.1942%	33.83	-2.34%	0.1451%
3/20/2009	27.12	5.85%	0.1798%	23.11	7.24%	0.1650%	37.95	2.96%	0.1230%	32.84	11.47%	0.1927%	34.64	8.56%	0.1488%
3/13/2009	25.62	3.72%	0.1761%	21.55	3.96%	0.1595%	36.86	-1.07%	0.1226%	29.46	4.32%	0.1877%	31.91	1.30%	0.1446%
3/6/2009	24.70	-10.96%	0.1666%	20.73	-5.04%	0.1500%	37.26	-5.86%	0.1261%	28.24	-10.01%	0.1777%	31.50	-10.18%	0.1425%
2/27/2009	27.74	-2.60%	0.1544%	21.83	-6.35%	0.1447%	39.58	-6.39%	0.1192%	31.38	5.87%	0.1674%	35.07	-4.36%	0.1315%
2/20/2009	28.48	-9.44%	0.1532%	23.31	-7.46%	0.1409%	42.28	-6.67%	0.1146%	29.64	-13.28%	0.1723%	36.67	-6.53%	0.1289%
2/13/2009	31.45	-6.12%	0.1423%	25.19	-2.93%	0.1322%	45.30	-1.39%	0.1063%	34.18	-5.42%	0.1563%	39.23	-3.85%	0.1204%
2/6/2009	33.50	8.66%	0.1371%	25.95	5.70%	0.1292%	45.94	1.21%	0.1049%	36.14	5.64%	0.1511%	40.80	1.77%	0.1171%
1/30/2009	30.83	0.33%	0.1297%	24.55	2.63%	0.1261%	45.39	8.93%	0.1075%	34.21	2.79%	0.1491%	40.09	4.43%	0.1141%
1/23/2009	30.73	-1.88%	0.1347%	23.92	-2.09%	0.1322%	41.67	-5.17%	0.1092%	33.28	-0.95%	0.1577%	38.39	0.31%	0.1172%
1/16/2009	31.32	-0.03%	0.1344%	24.43	2.00%	0.1321%	43.94	-0.95%	0.1080%	33.60	0.24%	0.1572%	38.27	3.88%	0.1165%
1/9/2009	31.33	-0.92%	0.1383%	23.95	-0.87%	0.1366%	44.36	-5.23%	0.1124%	33.52	-4.39%	0.1629%	36.84	-6.09%	0.1251%
1/2/2009	31.62	6.79%	0.1378%	24.16	2.50%	0.1361%	46.81	4.65%	0.1082%	35.06	2.82%	0.1600%	39.23	6.14%	0.1204%
12/26/2008	29.61	0.17%	0.1285%	23.57	1.73%	0.1331%	44.73	2.12%	0.1056%	34.10	-2.99%	0.1587%	36.96	-1.81%	0.1142%
12/19/2008	29.56	-0.67%	0.1287%	23.17	-1.28%	0.1333%	43.80	-7.40%	0.1055%	35.15	0.09%	0.1580%	37.64	1.89%	0.1136%
12/12/2008	29.76	4.79%	0.1299%	23.47	-2.45%	0.1363%	47.30	-5.08%	0.1100%	35.12	-4.12%	0.1600%	36.94	-5.84%	0.1146%
12/5/2008	28.40	-5.68%	0.1301%	24.06	-3.49%	0.1370%	49.83	-5.41%	0.1126%	36.63	-10.18%	0.1622%	39.23	-2.32%	0.1176%
11/28/2008	30.11	6.32%	0.1305%	24.93	3.75%	0.1377%	52.68	-0.15%	0.1109%	40.78	6.14%	0.1622%	40.16	3.08%	0.1176%
11/21/2008	28.32	-1.15%	0.1160%	24.03	7.66%	0.1273%	52.76	5.80%	0.1123%	38.42	-2.21%	0.1477%	38.96	8.61%	0.1115%
11/14/2008	28.65	-1.48%	0.1150%	22.32	-5.38%	0.1385%	49.87	0.50%	0.1104%	39.29	-7.40%	0.1446%	35.87	-0.66%	0.1232%
11/7/2008	29.08	-4.34%	0.1134%	23.59	-2.80%	0.1333%	49.62	-5.16%	0.1106%	42.43	-8.18%	0.1373%	36.11	-3.03%	0.1226%
10/31/2008	30.40	10.79%	0.1112%	24.27	9.77%	0.1342%	52.32	9.66%	0.1156%	46.21	5.60%	0.1328%	37.24	14.48%	0.1200%
10/24/2008	27.44	0.70%	0.0806%	22.11	2.55%	0.1122%	47.71	6.88%	0.0970%	43.76	2.80%	0.1216%	32.53	3.40%	0.0893%
10/17/2008	27.25	3.73%	0.0802%	21.56	1.84%	0.1165%	44.64	12.16%	0.1079%	42.57	9.91%	0.1251%	31.46	3.83%	0.0951%
10/10/2008	26.27	-16.07%	0.0808%	21.17	-23.35%	0.1170%	39.80	-19.24%	0.0998%	38.73	-16.26%	0.1177%	30.30	-15.55%	0.0947%
10/3/2008	31.30	-3.10%	0.0349%	27.62	0.58%	0.0400%	49.28	0.49%	0.0331%	46.25	-4.82%	0.0638%	35.88	-3.55%	0.0421%
9/26/2008	32.30	-4.38%	0.0318%	27.46	-2.28%	0.0428%	49.04	-0.37%	0.0350%	48.49	-2.49%	0.0563%	37.20	-4.00%	0.0372%
9/19/2008	33.78	2.09%	0.0295%	28.10	2.37%	0.0415%	49.22	8.10%	0.0345%	49.73	3.39%	0.0547%	38.75	6.14%	0.0348%
9/12/2008	33.09	3.60%	0.0295%	27.45	3.74%	0.0427%	45.53	5.56%	0.0378%	48.10	6.20%	0.0568%	36.51	5.09%	0.0367%
9/5/2008	31.94	-3.39%	0.0300%	26.46	-3.92%	0.0421%	43.13	-4.01%	0.0365%	45.29	-1.31%	0.0556%	34.74	-3.98%	0.0354%
8/29/2008	33.06	0.73%	0.0286%	27.54	2.57%	0.0403%	44.93	-3.25%	0.0351%	45.89	2.20%	0.0551%	36.18	0.81%	0.0340%
8/22/2008	32.82	1.20%	0.0287%	26.85	0.60%	0.0406%	46.44	1.66%	0.0348%	44.90	2.02%	0.0554%	35.89	-0.36%	0.0341%
8/15/2008	32.43	-2.14%	0.0312%	26.69	-0.04%	0.0417%	45.68	3.16%	0.0342%	44.01	4.49%	0.0562%	36.02	5.20%	0.0337%
8/8/2008	33.14	-1.07%	0.0314%	26.70	0.95%	0.0418%	44.28	4.53%	0.0339%	42.12	6.90%	0.0557%	34.24	2.18%	0.0334%
8/1/2008	33.50	-0.09%	0.0324%	26.45	2.64%	0.0418%	42.36	3.42%	0.0349%	39.40	1.86%	0.0526%	33.51	0.06%	0.0348%
7/25/2008	33.53	0.57%	0.0324%	25.77	1.02%	0.0427%	40.96	7.45%	0.0346%	38.68	0.47%	0.0520%	33.49	4.53%	0.0344%
7/18/2008	33.34	-1.36%	0.0376%	25.51	-4.39%	0.0467%	38.12	-4.99%	0.0438%	38.50	-4.66%	0.0579%	32.04	-4.50%	0.0417%
7/11/2008	33.80	3.30%	0.0383%	26.68	-1.95%	0.0487%	40.12	-0.17%	0.0463%	40.38	-4.04%	0.0597%	33.55	4.75%	0.0438%
7/4/2008	32.72	-3.59%	0.0399%	27.21	1.53%	0.0487%	40.19	-1.16%	0.0469%	42.08	-0.36%	0.0583%	32.03	-0.34%	0.0454%
6/27/2008	33.94	-1.02%	0.0398%	26.80	-1.47%	0.0494%	40.66	0.25%	0.0467%	42.23	-0.49%	0.0582%	32.14	-4.80%	0.0456%
6/20/2008	34.29	0.18%	0.0396%	27.20	2.91%	0.0487%	40.56	2.50%	0.0467%	42.44	-0.84%	0.0579%	33.76	1.53%	0.0431%
6/13/2008	34.23	-4.63%	0.0403%	26.43	-2.33%	0.0512%	39.57	-1.00%	0.0495%	42.80	2.47%	0.0589%	33.25	-0.63%	0.0458%

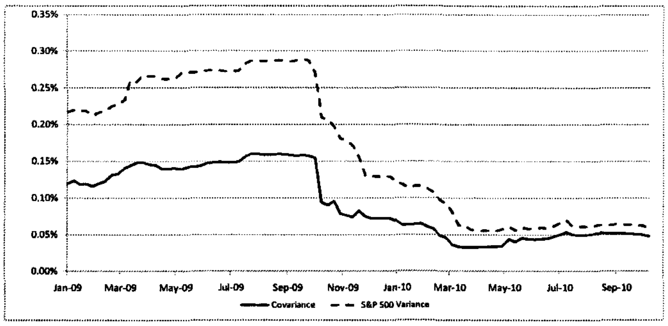
Beta Analysis

NWN Price	NWN Weekly Return	NWN Covar.	PNY Price	PNY Weekly Return	PNY Covar.	SJI Price	SJI Weekly Return	SJI Covar.	WGL Price	WGL Weekly Return	WGL Covar.	SPX Price	SPX Weekly Return	SPX Variance
49.61	3.51%	0.0597%	29.38	-0.03%	0.0445%	50.57	1.18%	0.0487%	38.12	0.03%	0.0393%	1165.15	1.65%	0.0590%
47.93	1.91%	0.0615%	29.39	2.80%	0.0454%	49.98	3.29%	0.0503%	38.11	1.98%	0.0402%	1146.24	-0.21%	0.0622%
47.03	1.71%	0.0627%	28.59	1.42%	0.0466%	48.39	1.96%	0.0504%	37.37	3.58%	0.0410%	1148.67	2.05%	0.0630%
46.24	0.02%	0.0630%	28.19	1.70%	0.0475%	47.46	0.34%	0.0504%	36.08	-0.66%	0.0408%	1125.59	1.45%	0.0634%
46.23	-1.03%	0.0642%	27.72	-1.28%	0.0494%	47.30	-1.36%	0.0520%	36.32	-1.12%	0.0428%	1109.55	0.46%	0.0641%
46.71	2.01%	0.0637%	28.08	0.11%	0.0478%	47.95	1.20%	0.0518%	36.73	1.97%	0.0421%	1104.51	3.75%	0.0652%
45.79	2.90%	0.0631%	28.05	5.53%	0.0489%	47.38	4.27%	0.0531%	36.02	1.72%	0.0414%	1064.59	-0.66%	0.0631%
44.50	-2.90%	0.0635%	26.58	-1.95%	0.0495%	45.44	-1.60%	0.0536%	35.41	-0.53%	0.0417%	1071.69	-0.70%	0.0630%
45.83	-3.15%	0.0636%	27.11	-2.27%	0.0511%	46.18	-2.41%	0.0536%	35.60	-2.33%	0.0421%	1079.25	-3.78%	0.0636%
47.32	-0.19%	0.0609%	27.74	4.21%	0.0490%	47.32	1.28%	0.0517%	36.45	1.03%	0.0402%	1121.64	1.82%	0.0607%
47.41	0.87%	0.0592%	26.62	0.08%	0.0471%	46.72	-0.02%	0.0501%	36.08	-0.47%	0.0402%	1101.60	-0.10%	0.0611%
47.00	6.89%	0.0591%	26.60	5.06%	0.0469%	46.73	5.84%	0.0500%	36.25	4.02%	0.0401%	1102.66	3.55%	0.0611%
43.97	-2.83%	0.0581%	25.32	-2.65%	0.0480%	44.15	-2.65%	0.0494%	34.85	-0.77%	0.0416%	1064.88	-1.21%	0.0619%
45.25	4.55%	0.0582%	26.01	3.42%	0.0506%	45.35	6.46%	0.0521%	35.12	4.34%	0.0446%	1077.96	5.42%	0.0699%
43.28	-2.13%	0.0545%	25.15	-2.48%	0.0497%	42.60	-2.70%	0.0482%	33.66	-1.43%	0.0421%	1022.58	-5.03%	0.0660%
44.22	-4.12%	0.0528%	25.79	-4.59%	0.0475%	43.78	-3.84%	0.0439%	34.15	-3.09%	0.0414%	1076.76	-3.65%	0.0619%
46.12	4.23%	0.0498%	27.03	4.85%	0.0440%	45.53	5.61%	0.0404%	35.24	4.14%	0.0387%	1117.51	2.37%	0.0580%
44.25	3.00%	0.0489%	25.78	3.08%	0.0444%	43.11	0.94%	0.0397%	33.84	2.36%	0.0376%	1091.60	2.51%	0.0599%
42.96	-2.30%	0.0476%	25.01	-1.57%	0.0436%	42.71	-2.69%	0.0395%	33.06	-2.33%	0.0368%	1064.88	-2.25%	0.0589%
43.97	0.64%	0.0491%	25.41	0.24%	0.0444%	43.89	0.00%	0.0389%	33.85	-0.50%	0.0374%	1089.41	0.16%	0.0584%
43.69	-6.57%	0.0529%	25.35	-6.28%	0.0467%	43.89	-2.36%	0.0388%	34.02	-5.60%	0.0391%	1087.69	-4.23%	0.0604%
46.76	7.49%	0.0468%	27.05	3.05%	0.0407%	44.95	7.66%	0.0362%	36.04	4.65%	0.0337%	1135.68	2.23%	0.0562%
43.50	-8.21%	0.0484%	26.25	-4.55%	0.0470%	41.75	-7.45%	0.0360%	34.44	-3.64%	0.0385%	1110.88	-6.39%	0.0612%
47.39	-3.33%	0.0402%	27.50	-3.17%	0.0380%	45.11	-0.20%	0.0251%	35.74	-0.72%	0.0305%	1186.69	-2.51%	0.0577%
49.02	3.42%	0.0383%	28.40	3.16%	0.0358%	45.20	6.73%	0.0248%	36.00	3.06%	0.0300%	1217.28	2.11%	0.0559%
47.40	1.11%	0.0381%	27.53	-0.33%	0.0358%	42.35	-1.28%	0.0234%	34.93	-0.74%	0.0298%	1192.13	-0.19%	0.0557%
46.88	-0.21%	0.0379%	27.62	0.29%	0.0355%	42.90	1.59%	0.0230%	35.19	0.95%	0.0297%	1194.37	1.38%	0.0557%
46.98	1.21%	0.0377%	27.54	1.51%	0.0353%	42.23	2.28%	0.0223%	34.86	1.04%	0.0293%	1178.10	0.99%	0.0558%
46.42	-0.79%	0.0373%	27.13	-3.18%	0.0346%	41.29	-1.83%	0.0231%	34.50	0.17%	0.0271%	1166.59	0.58%	0.0570%
46.79	0.80%	0.0366%	28.02	2.64%	0.0335%	42.06	2.86%	0.0221%	34.44	2.29%	0.0296%	1159.90	0.86%	0.0626%
46.42	-0.19%	0.0379%	27.30	2.09%	0.0358%	40.89	0.27%	0.0229%	33.67	-0.03%	0.0303%	1149.99	0.99%	0.0627%
46.51	5.73%	0.0413%	26.74	3.52%	0.0352%	40.78	2.28%	0.0215%	33.68	2.53%	0.0366%	1138.70	3.10%	0.0611%
43.99	-0.54%	0.0463%	25.83	2.09%	0.0436%	39.87	0.05%	0.0329%	32.85	-0.88%	0.0386%	1104.49	-0.42%	0.0924%
44.23	4.93%	0.0486%	25.30	2.72%	0.0469%	39.85	3.86%	0.0328%	33.14	4.38%	0.0435%	1109.17	3.13%	0.0976%
42.15	-0.19%	0.0529%	24.63	-0.24%	0.0525%	38.37	0.76%	0.0385%	31.75	0.38%	0.0482%	1075.51	0.87%	0.1073%
42.23	-2.63%	0.0560%	24.69	-3.82%	0.0569%	38.08	-0.65%	0.0393%	31.63	-0.32%	0.0527%	1066.19	-0.72%	0.1127%
43.37	-1.09%	0.0603%	25.67	-1.31%	0.0606%	38.33	0.42%	0.0411%	31.73	-1.24%	0.0609%	1073.87	-1.64%	0.1166%
43.85	-0.39%	0.0592%	26.01	-1.33%	0.0595%	38.17	-1.01%	0.0408%	32.13	-1.08%	0.0600%	1091.76	-3.90%	0.1160%
44.02	-1.70%	0.0604%	26.36	0.73%	0.0621%	38.56	1.96%	0.0405%	32.48	0.00%	0.0603%	1136.03	-0.78%	0.1135%
44.78	-0.58%	0.0558%	26.17	-2.17%	0.0636%	37.82	-0.94%	0.0420%	32.48	-3.16%	0.0556%	1144.98	2.68%	0.1182%
45.04	-1.66%	0.0609%	26.75	-1.96%	0.0754%	38.18	-1.47%	0.0485%	33.54	-1.93%	0.0624%	1115.10	-1.01%	0.1219%
45.80	2.23%	0.0600%	27.29	4.60%	0.0750%	38.75	1.87%	0.0565%	34.20	1.48%	0.0677%	1126.48	2.18%	0.1291%
44.80	-0.09%	0.0603%	26.09	3.24%	0.0725%	38.04	1.04%	0.0556%	33.70	1.29%	0.0676%	1102.47	-0.36%	0.1295%
44.84	2.49%	0.0603%	25.27	3.31%	0.0731%	37.65	1.60%	0.0560%	33.27	4.43%	0.0676%	1106.41	0.04%	0.1294%
43.75	2.24%	0.0606%	24.46	3.56%	0.0735%	36.95	3.21%	0.0562%	31.86	1.27%	0.0681%	1105.98	1.33%	0.1293%
42.79	-0.07%	0.0646%	23.62	2.65%	0.0751%	35.80	0.22%	0.0588%	31.46	0.41%	0.0715%	1091.49	0.01%	0.1306%
42.82	-0.09%	0.0658%	23.01	0.66%	0.0855%	35.72	3.03%	0.0685%	31.33	-1.76%	0.0756%	1091.38	-0.19%	0.1559%
42.86	-0.53%	0.0557%	22.86	-0.35%	0.0834%	34.67	-2.01%	0.0695%	31.89	-4.03%	0.0550%	1093.48	2.26%	0.1713%
43.09	3.06%	0.0601%	22.94	-1.46%	0.0833%	35.38	0.26%	0.0557%	33.23	0.51%	0.0544%	1069.30	3.20%	0.1791%
41.81	-2.81%	0.0613%	23.28	-1.85%	0.0851%	35.29	-1.76%	0.0554%	33.06	-3.47%	0.0569%	1036.19	-4.02%	0.1808%
43.02	-0.85%	0.0779%	23.72	-1.94%	0.1013%	35.93	-2.66%	0.0681%	34.25	1.03%	0.0760%	1079.60	-0.74%	0.1959%
43.39	2.26%	0.0701%	24.19	1.94%	0.0998%	36.91	1.91%	0.0649%	33.90	2.08%	0.0656%	1087.68	1.51%	0.2066%
42.43	3.64%	0.0699%	23.73	1.50%	0.1071%	36.22	2.75%	0.0661%	33.21	1.31%	0.0708%	1071.49	4.51%	0.2098%
40.94	-2.31%	0.1175%	23.38	-1.93%	0.1587%	35.25	0.95%	0.1168%	32.78	-1.47%	0.1551%	1025.21	-1.84%	0.2715%
41.91	-1.57%	0.1186%	23.84	-2.49%	0.1552%	34.92	-0.51%	0.1232%	33.27	-2.06%	0.1591%	1044.38	-2.24%	0.2875%
42.58	2.90%	0.1201%	24.45	5.34%	0.1556%	35.10	3.94%	0.1249%	33.97	4.23%	0.1615%	1068.30	2.45%	0.2887%
41.38	-1.10%	0.1192%	23.21	-3.37%	0.1539%	33.77	0.06%	0.1235%	32.59	-1.54%	0.1597%	1042.73	2.59%	0.2874%
41.84	-2.40%	0.1207%	24.02	-3.34%	0.1570%	33.75	-5.78%	0.1240%	33.10	-2.07%	0.1619%	1016.40	-1.22%	0.2860%
42.87	-2.06%	0.1216%	24.85	-2.93%	0.1580%	35.82	0.53%	0.1248%	33.80	-0.29%	0.1626%	1028.93	0.27%	0.2875%
43.77	1.67%	0.1216%	25.60	4.92%	0.1583%	35.63	1.22%	0.1246%	33.90	1.47%	0.1628%	1026.13	2.20%	0.2875%
43.05	0.82%	0.1208%	24.40	0.78%	0.1558%	35.20	-1.79%	0.1240%	33.41	-0.03%	0.1622%	1004.09	-0.63%	0.2862%
42.70	-4.35%	0.1214%	24.21	-1.67%	0.1562%	35.84	-2.82%	0.1240%	33.42	0.91%	0.1622%	1010.48	2.33%	0.2863%
44.64	-1.48%	0.1236%	24.62	-1.48%	0.1589%	36.88	-0.11%	0.1230%	33.12	-0.72%	0.1577%	987.48	0.84%	0.2869%
45.31	4.59%	0.1236%	24.99	5.89%	0.1594%	36.92	4.23%	0.1227%	33.36	5.50%	0.1581%	979.26	4.13%	0.2867%
43.32	0.88%	0.1198%	23.60	3.10%	0.1545%	35.42	3.45%	0.1191%	31.62	2.86%	0.1534%	940.38	6.97%	0.2828%
42.94	-1.36%	0.1164%	22.89	-4.31%	0.1473%	34.24	-3.82%	0.1124%	30.74	-3.21%	0.1478%	879.13	-1.93%	0.2730%
43.53	-0.98%	0.1154%	23.92	-0.79%	0.1452%	35.60	2.62%	0.1103%	31.76	-1.46%	0.1467%	896.42	-2.45%	0.2730%
43.96	-1.90%	0.1151%	24.11	-1.59%	0.1449%	34.69	1.26%	0.1113%	32.23	1.16%	0.1463%	918.90	-0.25%	0.2724%
44.81	-1.21%	0.1166%	24.50	-3.69%	0.1476%	34.26	-1.66%	0.1132%	31.86	-0.53%	0.1465%	921.23	-2.64%	0.2735%
45.36	0.04%	0.1149%	25.44	7.21%	0.1442%	34.84	1.37%	0.1121%	32.03	2.60%	0.1465%	946.21	0.65%	0.2739%
45.34	6.83%	0.1150%	23.73	4.72%	0.1420%	34.37	2.97%	0.1117%	31.25	5.15%	0.1459%	940.09	2.28%	0.2737%
42.44	6.37%	0.1110%	22.66	3.90%	0.1386%	33.38	0.54%	0.1100%	29.72	3.09%	0.1426%	919.14	3.62%	0.2730%
39.90	-3.39%	0.1058%	21.81	-2.37%	0.1358%	33.20	-3.63%	0.1096%	28.83	0.03%	0.1402%	887.00	0.47%	0.2706%
41.30	-3.77%	0.1055%	22.34	-6.68%	0.1364%	34.45	-1.74%	0.1109%	28.82	-5.66%	0.1403%	882.88	-4.99%	0.2718%
42.92	2.98%	0.1036%	23.94	-2.37%	0.1320%	35.06	0.00%	0.1118%	30.55	-2.46%	0.1374%	929.23	5.89%	0.2704%
41.68	2.81%	0.1006%	24.52	-0.16%	0.1350%	35.06	1.98%	0.1117%	31.32	1.66%	0.1408%	877.52	1.30%	0.2623%
40.54	-3.01%	0.1005%	24.56	-3.46%	0.1345%	34.38	-1.12%	0.1111%	30.81	-2.35%	0.1414%	866.23	-0.39%	0.2622%
41.80	-1.90%	0.0999%	25.44	-1.09%	0.1342%	34.77	-0.49%	0.1110%	31.55	0.64%	0.1411%	869.60	1.52%	0.2625%
42.61	-1.34%	0.1055%	25.72	-0.43%	0.1387%	34.94	-2.48%	0.1144%	31.35	-1.57%	0.1469%	856.56	1.67%	0.2664%
43.19	-0.32%	0.1058%	25.83	-1.26%	0.1392%	35.83	2.11%	0.1156%	31.85	-4.04%	0.1484%	842.50	3.26%	0.2661%
43.33	-0.53%	0.1079%	26.16	-0.72%	0.1429%	35.09	-0.48%	0.1175%	33.19	2.50%	0.1540%	815.94	6.17%	0.2677%
43.56	9.01%	0.1088%	26.35	16.08%	0.1442%	35.26	6.20%	0.1182%	32.38	4.72%	0.1510%	768.54	1.58%	0.2582%
39.96	2.17%	0.1057%	22.70	0.09%	0.1373%	33.20	-0.33%	0.1178%	30.92	3.62%	0.1485%	756.65	10.71%	0.2603%
39.11	-4.49%	0.1008%	22.68	-6.05%	0.1377%	33.31	-7.63%	0.1190%	29.84	-1.71%	0.1411%	683.38	-7.03%	0.2340%
40.95	-2.20%	0.0957%	24.14	-2.70%	0.1310%	36.06	0.25%	0.1117%	30.36	-4.80%	0.1395%	735.09	-4.54%	0.2278%
41.87	-4.56%	0.0951%	24.81	-4.69%	0.1292%	35.97	-4.99%	0.1122%	31.89	-4.69%	0.1367%	770.05	-6.87%	0.2254%
43.87	-3.09%	0.0894%	26.03	-4.41%	0.1235%	37.86	-0.79%	0.1061%	33.46	-4.51%	0.1311%	826.84	-4.81%	0.2188%
45.27	5.43%	0.0857%	27.23	5.09%	0.1200%	38.16	2.31%	0.1057%	35.04	9.16%	0.1276%	868.60	5.17%	0.2166%
42.94	2.34%	0.0780%	25.91	2.37%	0.1160%	37.30	2.05%	0.1048%	32.10	1.33%	0.1178%	825.88	-0.73%	0.2125%
41.96	-2.98%	0.0773%	25.31	-7.15%	0.1202%	36.55	-1.22%	0.1071%	31.68	-2.25%	0.1194%	831.95	-2.14%	0.2187%
43.25	4.34%	0.0763%	27.26	-1.41%	0.1177%	37.00	-0.94%	0.1060%	32.41	4.82%	0.1182%	850.12	-4.52%	0.2186%
41.45	-4.91%	0.0825%	27.65	-11.60%	0.1205%	37.35	-6.48%	0.1079%	30.92	-5.65%	0.1253%	890.35	-4.45%	0.2201%
43.59	-0.21%	0.0790%	31.28	-0.10%	0.1119%	39.94	7.02%	0.1031%	32.77	6.03%	0.1211%	931.80	6.76%	0.2174%
43.68	-2.28%	0.0822%	31.31	1.99%	0.1161%	37.32	0.95%	0.0942%	31.20	-0.41%	0.1162%	872.80	-1.70%	0.2091%
44.70	-0.11%	0.0819%	30.70	-0.55%	0.1160%	36.97	3.15%	0.0941%	31.33	-1.45%	0.1159%	887.88	0.93%	0.2090%
44.75	-1.97%	0.0840%	30.87	-3.47%	0.1182%	35.84	-2.37%	0.0954%	31.79	-5.33%	0.1186%	879.73	0.42%	0.2092%
45.65	-8.61%	0.0852%	31.98	-4.82%	0.1200%	36.71	-5.87%	0.0970%	33.58	-6.98%	0.1212%	876.07	-2.25%	0.2093%
49.95	0.28%	0.0833%	33.60	4.02%	0.1198%	39.00	4.33%	0.0949%	36.10	1.75%	0.1199%	896.24	12.03%	0.2101%
49.81	5.69%	0.0806%	32.30	0.78%	0.1113%	37.38	5.47%	0.0821%	35.48	11.85%	0.1157%	800.03	-8.39%	0.1805%
47.13	-3.52%	0.0887%	32.05	-0.56%	0.1117%	35.44	3.63%	0.0899%	31.72	1.76%	0.1324%	873.29	-6.20%	0.1699%
48.85	-3.99%	0.0856%	32.23	-2.10%	0.1105%	34.20	0.38%	0.0945%	31.17	-3.17%	0.1343%	930.99	-3.90%	0.1646%
50.88	9.49%	0.0816%	32.92	8.43%	0.1085%	34.07	7.61%	0.0947%	32.19	11.69%	0.1326%	968.75	10.49%	0.1644%
46.47	5.49%	0.0609%	30.36	0.43%	0.0916%	31.66	2.19%	0.0780%	28.82	8.02%	0.1072%	876.77	-6.78%	0.1397%
44.05	0.43%	0.0690%	30.23	9.33%	0.0945%	30.98	2.24%	0.0660%	26.68	7.41%	0.1182%	940.55	4.60%	0.1350%
43.86	-14.47%	0.0710%	27.65	-15.37%	0.0892%	30.30	-14.67%	0.0878%	24.84	-23.59%	0.1129%	899.22	-18.20%	0.1310%
51.28	-1.37%	0.0220%	32.67	1.24%	0.0364%	35.51	-3.37%	0.0396%	32.51	-2.37%	0.0353%	1099.23	-9.38%	0.0730%
51.99	-3.54%	0.0212%	32.27	-2.92%	0.0403%	36.75	-3.21%	0.0369%	33.30	-5.24%	0.0319%	1213.01	-3.35%	0.0592%
53.90	7.71%	0.0187%	33.24	10.25%	0.0382%	37.97	6.96%	0.0346%	35.14	3.87%	0.0289%	1255.08	0.27%	0.0575%
50.04	5.26%	0.0205%	30.15	7.68%	0.0379%	35.50	2.81%	0.0387%	33.83	6.92%	0.0305%	1251.70	0.76%	0.0593%
47.54	-2.44%	0.0198%	28.00	-2.95%	0.0346%	34.53	-3.20%	0.0392%	31.64	-1.74%	0.0301%	1242.31	-3.16%	0.0602%
48.73	1.31%	0.0192%	28.85	0.42%	0.0333%	35.67	1.16%	0.0384%	32.20	-1.50%	0.0298%	1282.83	-0.73%	0.0589%
48.10	0.54%	0.0194%	28.73	1.20%	0.0334%	35.26	1.29%	0.0385%	32.69	0.71%	0.0297%	1292.20	-0.46%	0.0588%
47.84	6.15%	0.0192%	28.39	3.80%	0.0332%	34.81	0.55%	0.0407%	32.46	0.15%	0.0297%	1298.20	0.15%	0.0600%
45.07	-0.07%	0.0188%	27.35	2.97%	0.0329%	34.62	-3.99%	0.0410%	32.41	-6.52%	0.0296%	1296.32	2.86%	0.0600%
45.10	-3.01%	0.0232%	26.56	2.00%	0.0355%	36.06	-3.17%	0.0465%	34.67	2.15%	0.0366%	1260.31	0.20%	0.0587%
46.50	5.32%	0.0231%	26.04	3.99%	0.0356%	37.24	1.17%	0.0475%	33.94	1.50%	0.0363%	1257.76	-0.23%	0.0592%
44.15	-5.22%	0.0299%	25.04	-6.39%	0.0399%	36.81	-4.07%	0.0536%	33.44	-3.58%	0.0438%	1260.68	1.71%	0.0632%
46.58	2.42%	0.0324%	26.75	3.76%	0.0429%	38.37	4.04%	0.0559%	34.68	1.05%	0.0456%	1239.49	-1.85%	0.0625%
45.48	-0.92%	0.0335%	25.78	0.04%	0.0446%	36.88	-0.30%	0.0574%	34.32	-0.81%	0.0466%	1262.90	-1.21%	0.0627%
45.90	-2.94%	0.0327%	25.77	-5.57%	0.0447%	36.99	-4.25%	0.0579%	34.60	-0.55%	0.0462%	1278.38	-3.00%	0.0634%
47.29	2.49%	0.0311%	27.29	3.96%	0.0416%	38.63	0.99%	0.0556%	34.79	-0.54%	0.0459%	1317.93	-3.10%	0.0620%
46.14	0.65%	0.0341%	26.25	-4.37%	0.0463%	38.25	0.21%	0.0569%	34.98	-0.37%	0.0473%	1360.03	-0.05%	0.0610%

Beta Analysis

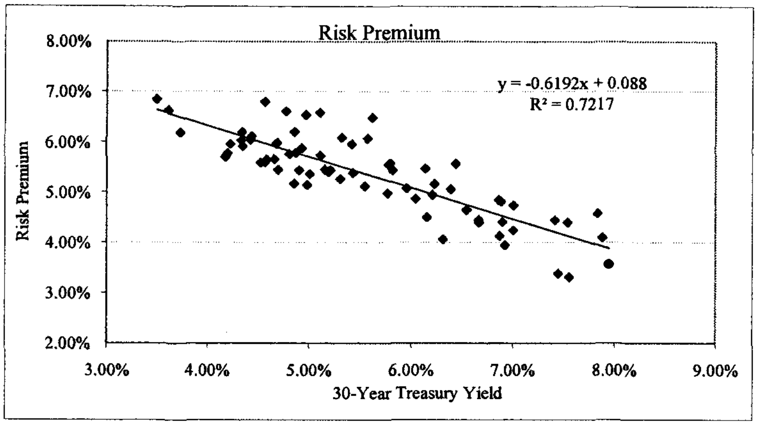
Average Proxy Group

Covariance	Raw Beta	Adj. Beta
0.0481%	0.814	0.876
0.0499%	0.802	0.868
0.0508%	0.806	0.871
0.0509%	0.803	0.869
0.0524%	0.818	0.879
0.0522%	0.800	0.867
0.0521%	0.826	0.884
0.0525%	0.833	0.889
0.0530%	0.833	0.888
0.0506%	0.833	0.889
0.0495%	0.810	0.874
0.0493%	0.807	0.871
0.0503%	0.812	0.874
0.0536%	0.767	0.844
0.0502%	0.760	0.840
0.0477%	0.771	0.847
0.0452%	0.766	0.844
0.0442%	0.738	0.825
0.0434%	0.736	0.824
0.0442%	0.756	0.837
0.0457%	0.756	0.837
0.0403%	0.718	0.812
0.0442%	0.722	0.814
0.0347%	0.602	0.735
0.0341%	0.610	0.740
0.0338%	0.607	0.738
0.0336%	0.602	0.735
0.0331%	0.593	0.729
0.0328%	0.575	0.717
0.0326%	0.521	0.680
0.0337%	0.537	0.692
0.0366%	0.452	0.634
0.0465%	0.503	0.669
0.0493%	0.505	0.670
0.0577%	0.537	0.692
0.0613%	0.544	0.696
0.0653%	0.560	0.707
0.0643%	0.554	0.703
0.0642%	0.565	0.710
0.0630%	0.533	0.689
0.0688%	0.564	0.710
0.0727%	0.563	0.709
0.0721%	0.557	0.705
0.0722%	0.558	0.705
0.0725%	0.561	0.707
0.0751%	0.575	0.716
0.0827%	0.531	0.687
0.0744%	0.435	0.623
0.0767%	0.428	0.619
0.0787%	0.435	0.623
0.0955%	0.485	0.657
0.0904%	0.437	0.625
0.0945%	0.450	0.634
0.1549%	0.571	0.714
0.1574%	0.547	0.698
0.1587%	0.550	0.700
0.1575%	0.548	0.699
0.1586%	0.554	0.703
0.1598%	0.556	0.704
0.1599%	0.556	0.704
0.1588%	0.555	0.703
0.1590%	0.555	0.704
0.1601%	0.558	0.705
0.1605%	0.560	0.707
0.1560%	0.552	0.701
0.1494%	0.547	0.698
0.1483%	0.543	0.696
0.1482%	0.544	0.696
0.1493%	0.546	0.697
0.1482%	0.541	0.694
0.1474%	0.539	0.692
0.1440%	0.528	0.685
0.1420%	0.525	0.683
0.1424%	0.524	0.683
0.1396%	0.516	0.677
0.1408%	0.537	0.691
0.1397%	0.533	0.689
0.1396%	0.532	0.688
0.1444%	0.542	0.695
0.1455%	0.547	0.698
0.1479%	0.553	0.702
0.1479%	0.573	0.715
0.1444%	0.555	0.703
0.1402%	0.599	0.733
0.1328%	0.583	0.722
0.1314%	0.583	0.722
0.1231%	0.563	0.708
0.1198%	0.553	0.702
0.1160%	0.546	0.697
0.1194%	0.546	0.697
0.1185%	0.542	0.695
0.1235%	0.561	0.707
0.1197%	0.551	0.700
0.1165%	0.557	0.705
0.1163%	0.557	0.704
0.1186%	0.567	0.711
0.1203%	0.575	0.717
0.1196%	0.569	0.713
0.1116%	0.618	0.746
0.1162%	0.695	0.797
0.1168%	0.709	0.806
0.1146%	0.697	0.798
0.0938%	0.672	0.781
0.1002%	0.742	0.828
0.0974%	0.744	0.829
0.0386%	0.528	0.685
0.0371%	0.627	0.751
0.0350%	0.609	0.739
0.0368%	0.620	0.746
0.0359%	0.596	0.731
0.0349%	0.592	0.728
0.0349%	0.594	0.729
0.0355%	0.592	0.728
0.0354%	0.590	0.726
0.0376%	0.640	0.760
0.0376%	0.636	0.758
0.0439%	0.694	0.796
0.0460%	0.735	0.824
0.0468%	0.747	0.831
0.0468%	0.738	0.825
0.0456%	0.735	0.824
0.0478%	0.784	0.856



BOND YIELD PLUS RISK PREMIUM ANALYSIS

	[1]	[2]	[3]
Quarter	Average Authorized Gas ROE	U.S. Govt. 30-year Treasury	Risk Premium
1992.1	12.42%	7.84%	4.58%
1992.2	11.98%	7.88%	4.10%
1992.3	11.87%	7.42%	4.45%
1992.4	11.94%	7.54%	4.40%
1993.1	11.75%	7.01%	4.74%
1993.2	11.71%	6.86%	4.85%
1993.3	11.39%	6.23%	5.16%
1993.4	11.16%	6.21%	4.95%
1994.1	11.12%	6.66%	4.46%
1994.2	10.84%	7.45%	3.39%
1994.3	10.87%	7.55%	3.31%
1994.4	11.53%	7.95%	3.58%
1995.2	11.00%	6.87%	4.13%
1995.3	11.07%	6.66%	4.40%
1995.4	11.61%	6.14%	5.47%
1996.1	11.45%	6.39%	5.06%
1996.2	10.88%	6.92%	3.95%
1996.3	11.25%	7.00%	4.25%
1996.4	11.19%	6.54%	4.65%
1997.1	11.31%	6.90%	4.41%
1997.2	11.70%	6.88%	4.82%
1997.3	12.00%	6.44%	5.56%
1997.4	10.92%	6.04%	4.87%
1998.2	11.37%	5.79%	5.57%
1998.3	11.41%	5.32%	6.09%
1998.4	11.69%	5.11%	6.59%
1999.1	10.82%	5.43%	5.39%
1999.2	11.25%	5.82%	5.43%
1999.4	10.38%	6.31%	4.06%
2000.1	10.66%	6.15%	4.50%
2000.2	11.03%	5.95%	5.08%
2000.3	11.33%	5.78%	5.56%
2000.4	12.10%	5.62%	6.48%
2001.1	11.38%	5.42%	5.96%
2001.2	10.75%	5.77%	4.98%
2001.4	10.65%	5.21%	5.44%
2002.1	10.67%	5.55%	5.12%
2002.2	11.64%	5.57%	6.07%
2002.3	11.50%	4.96%	6.54%
2002.4	10.81%	4.93%	5.88%
2003.1	11.38%	4.78%	6.61%
2003.2	11.36%	4.57%	6.80%
2003.3	10.61%	5.15%	5.46%
2003.4	10.84%	5.11%	5.73%
2004.1	11.06%	4.86%	6.20%
2004.2	10.57%	5.31%	5.27%
2004.3	10.37%	5.01%	5.36%
2004.4	10.66%	4.87%	5.79%
2005.1	10.65%	4.69%	5.96%
2005.2	10.54%	4.34%	6.19%
2005.3	10.47%	4.43%	6.04%
2005.4	10.32%	4.66%	5.66%
2006.1	10.68%	4.69%	5.99%
2006.2	10.60%	5.19%	5.41%
2006.3	10.34%	4.90%	5.44%
2006.4	10.14%	4.70%	5.45%
2007.1	10.57%	4.81%	5.76%
2007.2	10.13%	4.98%	5.14%
2007.3	10.03%	4.85%	5.17%
2007.4	10.12%	4.53%	5.59%
2008.1	10.38%	4.34%	6.04%
2008.2	10.17%	4.57%	5.60%
2008.3	10.55%	4.44%	6.12%
2008.4	10.34%	3.49%	6.85%
2009.1	10.24%	3.62%	6.63%
2009.2	10.19%	4.23%	5.96%
2009.3	9.88%	4.18%	5.70%
2009.4	10.27%	4.35%	5.92%
2010.1	10.24%	4.59%	5.65%
2010.2	9.99%	4.20%	5.78%
2010.3	9.93%	3.73%	6.20%
AVERAGE	10.96%	5.63%	5.33%
	10.87%	5.42%	5.44%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.849541739
R Square	0.721721167
Adjusted R Square	0.71768814
Standard Error	0.004345461
Observations	71

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.00337917	0.00337917	178.952743	7.65588E-21
Residual	69	0.001302929	1.8883E-05		
Total	70	0.004682099			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*.ower 95.0%*	*Jpper 95.0%*
Intercept	0.088037664	0.002634062	33.42277311	2.38187E-44	0.082782853	0.093292	0.082783	0.093292
U.S. Govt. 30-year Treasury	-0.619206367	0.046287767	-13.37732197	7.65588E-21	-0.711547936	-0.52686	-0.71155	-0.52686

	[4]	[5]	[6]
	U.S. Govt. 30-year Treasury	Risk Premium	Authorized ROE
30-Day Average of 30-year Treasury	3.75%	6.48%	10.23%
Blue Chip Consensus Forecast (2010Q4 - 2012Q	4.22%	6.19%	10.41%
Blue Chip Consensus Forecast (2012 - 2021)	5.80%	5.21%	11.01%
MEAN		5.96%	10.55%

Notes
[1] Source: Regulatory Research Associates, *Rate Case Statistics*, accessed September 27, 2010.
[2] Source: Bloomberg Professional Service. Quarterly bond yields are the average of the last trading day of each month in the quarter.
[3] Equals column [1] – column [2]
[4] Source: Bloomberg Professional Service and Blue Chip Financial Forecast
[5] Dependent Variable = Risk Premium; Independent variable = U.S. Govt. 30-year Treasury
[6] Equals column [4] + column [5]

ANALYSIS OF REGULATORY LAG

State	Company	Case Identification	Increase Requested	Order Date	Lag (months)
Arizona	Southwest Gas Corp.	D-G-01551A-07-0504	8/31/2007	12/24/2008	16
Arizona	Southwest Gas Corp.	D-G-01551A-04-0876	12/9/2004	2/23/2006	14
Arizona	Southwest Gas Corp.	D-G-01551A-00-0309	5/5/2000	10/24/2001	17
Mean					16
District of Columbia	Washington Gas Light Co.	FC-1054	12/21/2006	12/28/2007	12
District of Columbia	Washington Gas Light Co.	FC-1016	2/7/2003	11/10/2003	9
District of Columbia	Washington Gas Light Co.	FC-989	6/19/2001	10/30/2002	16
Florida	Pivotal Utility Holdings Inc.	D-030569-GU	8/15/2003	2/9/2004	5
Florida	Pivotal Utility Holdings Inc.	D-000768-GU	8/25/2000	2/5/2001	5
Georgia	Atlanta Gas Light Co.	D-18638-U	5/25/2004	6/10/2005	12
Georgia	Atlanta Gas Light Co.	D-14311-U	8/24/2001	4/29/2002	8
Georgia	Atmos Energy Corp.	D-30442	10/1/2009	3/31/2010	6
Georgia	Atmos Energy Corp.	D-27163-U	3/20/2008	9/19/2008	6
Georgia	Atmos Energy Corp.	D-20298-U	5/20/2005	12/20/2005	7
Kansas	Atmos Energy Corp.	D-10-ATMG-495-RTS	1/29/2010	7/30/2010	6
Kansas	Atmos Energy Corp.	D-08-ATMG-280-RTS	9/14/2007	4/23/2008	7
Kansas	Atmos Energy Corp.	D-03-ATMG-1036-RTS	6/15/2003	1/5/2004	6
Kentucky	Atmos Energy Corp.	C-2009-00354	10/29/2009	5/28/2010	7
Kentucky	Atmos Energy Corp.	C-2006-00464	12/28/2006	7/31/2007	7
Maryland	Washington Gas Light Co.	C-9104	4/20/2007	11/15/2007	6
Maryland	Washington Gas Light Co.	C-8959	3/13/2003	10/31/2003	7
Maryland	Washington Gas Light Co.	C-8920	3/28/2002	9/27/2002	6
Missouri	Atmos Energy Corp.	C-GR-2010-0192	12/28/2009	8/18/2010	7
Missouri	Laclede Gas Co.	C-GR-2010-0171	12/4/2009	8/18/2010	8
Missouri	Laclede Gas Co.	C-GR-2007-0208	12/1/2006	7/19/2007	7
Missouri	Laclede Gas Co.	C-GR-2005-0284	2/18/2005	9/30/2005	7
Missouri	Laclede Gas Co.	C-GR-2002-356	1/25/2002	10/3/2002	8
Missouri	Laclede Gas Co.	C-GR-2001-629	5/18/2001	11/29/2001	6
North Carolina	Piedmont Natural Gas Co.	D-G-9, Sub 550	3/31/2008	10/24/2008	6
North Carolina	Piedmont Natural Gas Co.	D-G-9,SUB499	4/1/2005	11/3/2005	7
North Carolina	Piedmont Natural Gas Co.	D-G-9,SUB461	3/28/2002	10/28/2002	7
New Jersey	New Jersey Natural Gas Co.	D-GR-07110889	11/20/2007	10/3/2008	10
New Jersey	Pivotal Utility Holdings Inc.	D-GR-09030195	3/10/2009	12/17/2009	9
New Jersey	Pivotal Utility Holdings Inc.	D-GR-02040245	4/16/2002	11/20/2002	7
New Jersey	South Jersey Gas Co.	D-GR-10010035	1/15/2010	9/16/2010	8
New Jersey	South Jersey Gas Co.	D-GR-03080683	8/29/2003	7/8/2004	10
Oregon	Northwest Natural Gas Co.	D-UG-152	11/29/2002	8/22/2003	8
South Carolina	South Carolina Electric & Gas	D-2005-113-G	4/26/2005	10/31/2005	6
Tennessee	Atmos Energy Corp.	D-08-00197	10/15/2008	3/9/2009	4
Tennessee	Atmos Energy Corp.	D-07-00105	5/4/2007	10/8/2007	5
Tennessee	Chattanooga Gas Company	D-09-00183	11/16/2009	5/24/2010	6
Tennessee	Chattanooga Gas Company	D-06-00175	6/30/2006	12/5/2006	5
Tennessee	Piedmont Natural Gas Co.	D-03-00313	4/29/2003	9/22/2003	4
Texas	Atmos Energy Corp.	D-GUD 9869	4/24/2009	1/26/2010	9
Texas	Atmos Energy Corp.	D-GUD-9762	10/26/2007	6/24/2008	8
Texas	Atmos Energy Corp.	D-GUD-9670	5/31/2006	3/29/2007	10
Texas	Atmos Energy Corp.	D-GUD-9400	5/23/2003	5/25/2004	12
Virginia	Virginia Natural Gas Inc.	C-PUE-2005-00057	7/1/2005	7/24/2006	12
Virginia	Washington Gas Light Co.	C-PUE-2006-00059	9/15/2006	9/19/2007	12
Virginia	Washington Gas Light Co.	C-PUE-2003-00603	1/27/2004	9/27/2004	8
Virginia	Washington Gas Light Co.	C-PUE-2002-00364	6/14/2002	12/18/2003	18
Washington	Northwest Natural Gas Co.	D-UG-08-0546	3/28/2008	12/26/2008	9
Washington	Northwest Natural Gas Co.	D-UG-03-1885	11/19/2003	6/23/2004	7
Mean					8

Source: SNL Energy, Inc.

CURRENT AND PROPOSED ADJUSTMENT MECHANISMS
PROXY GROUP COMPANIES

	AGL	ATO	LG	NJR	GAS	NWN	PNY	SJI	WGL
Gas Supply Recovery	• PGA in all applicable jurisdictions	• Purchased Gas Adjustment in all 13 jurisdictions	• Monthly PGA • Financial Risk Management (FRM) Incentives	• Basic Gas Supply Service Rider • FRM Incentives	• Annual PGA	• Annual PGA • FRM Incentives	• PGA in all applicable jurisdictions • FRM Incentives (TN)	• Basic Gas Supply Service Clause	• PGA • FRM Incentives
General Cost Recovery Mechanisms	• Environ mental Recovery Rider (FL,GA) • Societal Benefits Charge (NJ) • Regulatory Asset recovery (NJ) • Pension& PBOP • WNA (NJ, TN, VA) • STRIDE infrastructure and pipeline replacement (GA, NJ) • Accelerated Infrastructure Replacement (NJ) • IT Margin Credit (TN)	• Weather Normalization (GA, KS, KY, LA, MS, TN, TX, VA) • Energy Efficiency & DSM Programs (CO, IA, KY, TX) • Local Taxes (CO, GA, IL, KS, TN, TX) • Pipe Replacement Surcharge (GA, KY) • Environmental Cost Recovery (TN) • Pipeline Safety Program (TX) • Transportation Gas Cost Adj. (CO) • Advanced Metering Infrastructure Surcharge (CO) • Take or Pay Adjustment (IA)	• Infrastructure System Replacement Surcharge ("ISRS") • Billing of License, Occupation, or Other Similar Charges or Taxes • Residential Tariff Seasonal Structure	• Weather Normalization Clause • New Jersey Sales and Use Tax • Transitional Energy Facilities Assessment • Energy Efficiency • Accelerated Infrastructure Program • • Societal Benefits Charge • New Jersey's Clean Energy Program • Remediation Adjustment • Universal Service Fund	• Storage Service Cost Recovery • Environmental Cost Recovery • Energy Efficiency Plan • Franchise Cost Adjustment • Governmental Agency Compensation Adjustment • Adjustments for Municipal, Local Governmental Unit and State Utility Taxes • Uncollectible Expense Adjustment	• Weather Normalization (OR) • Environmental Remediation (OR) • System Integrity Program (OR) • Industrial DSM Program Cost Recovery (OR) • Energy Conservation Programs Adjustment (WA) • Automated Meter Reading Deferral (OR) • Local Taxes (OR)	• Weather Normalization (SC,TN) • Pipeline Integrity Management Costs (NC)	• Societal Benefits Clause • USF • RAC • NJCEP • PBOP FAS 158 • Pension Accruals • Accelerated Infrastructure Program • Pipeline Integrity • Temperature Adjustment Clause • Capital Investment Recovery Tracker • Transportation Initiation Clause • SUT Clause • Energy Efficiency Tracker	• WNA (VA) • DSM (MD) • Pension and OPEB (DC)

Decoupling	• Straight Fixed Variable (GA) • Decoupling (MD, NJ) • Conservation and Ratemaking Efficiency Plan (VA)	• Margin Loss Recovery (GA, TN) • DSM Lost Sales Adjustment (KY) • Rate Stabilization Clause (LA, MS) • Rate Review Mechanism (TX)		• Conservation Incentive Program	• Straight-Fixed Variable Rate Design	• Conservation Tariff – Partial decoupling (OR)	• Margin Decoupling Mechanism(NC) • Natural gas Rate Stabilization Act (SC)	• Conservation Incentive Program	• Rev Normalization Adjustment (MD) • Conservation and Ratemaking Efficiency Plan (VA)
PBR	• PBR (TN)	• Performance Based Rate Mechanism (KY – *Experimental*, TN)							• PBR (VA) • Earnings sharing mechanism (DC, VA)
Proposed Mechanisms	• Decoupling to be proposed upcoming rate cases. • Proposed an Efficient Usage Adjustment Mechanism in NJ.								• RNA (DC)

AGL Resources

Florida	
Purchased Gas Adjustment	The PGA Charge is designed to recover the cost of purchased gas including the cost of storing or transporting, the cost of financial instruments employed to stabilize gas costs, other charges or credits as may result from the operation of other tariff provisions, and taxes and assessments in connection with the purchase and sale of gas. Over and under-recoveries are reconciled with interest.
Energy Conservation Cost Recovery Rider (ECCR)	The ECCR Rider is applied to the distribution charge to recover conservation related expenditures by the Company, including program costs and customer incentives. The rider is set based on the Company's estimated conservation costs (programs and customer incentives) for the next calendar year, along with a true-up for any actual conservation cost under-or over-recovery for the previous year and requires regulatory approval.
Competitive Rate Adjustment	The Competitive Rate Adjustment provides for the collection/reimbursement of shortfalls/surpluses collected through the Distribution Charge. The existence of a shortfall or surplus shall be determined by comparing Company's actual revenue with its base revenue.
Georgia	
Straight Fixed Variable Sculpting Adjustment (GA)	This mechanism is designed to help collect the difference between Dedicated Design Day Capacity charges collected and those accrued. Charges are collected based on a "sculpted" schedule designed around customer usage. Charges are recognized based on a straight-fixed variable rate design. For financial accounting purposes, the Company records into a deferred revenue account the difference between the Straight Fixed-Variable Dedicated Design Day Capacity revenues recognized and the Sculpted Dedicated Design Day Capacity collected. The company reconciles such deferred revenue account annually for the period of February 1 through January 31, and applies the appropriate positive or negative adjustment (the SFV Sculpting Adjustment) to the DDDC for a subsequent period. The Rider is only applicable to Residential Delivery Service customers.
Environmental Response Cost Recovery Rider (GA)	Environmental Response Costs including investigation, remediation, testing and litigation expenses. This cost factor is calculated annually and an adjustment rider is used to "true up" any over or under recovery. Environmental Response Costs cannot exceed 5% of jurisdictional revenues in any year.
Social Responsibility Cost Rider (GA)	The Social Responsibility Cost Rider is used to collect a portion of Low Income Senior Citizen Discounts which the Utility has distributed.
Strategic Infrastructure Development and Enhancement program (STRIDE)	STRIDE is an infrastructure development investment program whereby the Company files a ten year plan for infrastructure improvement every three years to be approved by the Commission. Cost recovery for the programs included in STRIDE are recovered through this mechanism. The Company's prior mains replacement program has been rolled into this program.
Maryland	
Purchased Gas Adjustment Clause (PGA)	Purchased Gas Adjustment is a monthly adjustment consisting of the current annualized cost of purchased gas, including transportation and storage. The Actual Cost Adjustment is calculated to determine the difference between

	PGA collected and actual cost of gas. This is calculated and applied annually, per therm, to "true up" the accounts.
Revenue Normalization Adjustment Clause (RNA)	The RNA normalizes monthly heating customer bills, based on an average monthly bill. The RNA is calculated for two rate classes, Residential and Commercial. The charge is based on the revenues derived from the Customer and Distribution charges by class as authorized in the Company's last rate case as well as actual customers billed in a month and the total actual revenue for the month. .
New Jersey	
Basic Gas Supply Service Charge (NJ)	The BGSS Charge, as defined herein, is designed to recover the cost to the Company of purchased gas including the cost of storing or transporting said gases or fuel, the cost of financial instruments employed to stabilize gas costs, other charges or credits as may result from the operation of other tariff provisions, and taxes and assessments in connection with the purchase and sale of gas. The BGSS is calculated monthly for customers in the following classes: GDS, LVD, EGF. Customers in the RDS, SGS, and GLS classes are subject to annual adjustments.
Weather Normalization Clause (NJ)	The weather normalization charge applied in each winter period is calculated based on the difference between actual and normal weather during the preceding winter period, divided by sales. WNA charges are calculated annually, following the winter months.
On-System Margin Sharing Credit (NJ)	The On-System Margin Sharing Credit. The Rider is applicable to all service classifications that pay BGSS and RDS customers that receive gas from a TPS. The OSMC shall be calculated annually by taking the current year's credits, plus the prior year's OSMC over or under recovery balance and dividing the resulting sum by the annual forecasted volumes for the service classifications set forth above. The resulting rate shall be adjusted for all applicable taxes and assessments.
Societal Benefits Charge (NJ)	The SBC is designed to recover the costs of (1) Clean Energy Programs that were approved by the Board pursuant to its Comprehensive Resource Analysis regulations prior to April 30, 1997. The Clean Energy Program includes program costs not recoverable directly from standard offer providers and costs due to decreasing margin revenue as a result of improved efficiency and DSM. (2) Manufactured Gas Plant Remediation, and (3) Consumer Education and any other new programs which the Board determines should be recovered through the Societal Benefits Charge. (4) The Universal Service Fund and Lifeline which offer programs and assistance for low income families.
Regulatory Asset Recovery Charge (NJ)	The RARC is designed to recover stranded costs, costs that the Company cannot recover as a result of restructuring by the BPU. It is applicable to all Service Classifications except those with special contracts. The RARC shall be calculated annually by taking the total stranded costs plus the prior year's RARC over or under-recovery balance plus carrying costs, using the interest rate applicable to the RAC component of the SBC, and dividing by the forecasted quantities used in

	the calculation of the Societal Benefits Charge in Rider "D". The resulting rate shall be adjusted for all applicable taxes and assessments.
Infrastructure Replacement Program	In April 2009 the BPU approved an accelerated $60 million enhanced infrastructure program that will begin in 2009 and end in 2011.
Tennessee	
Weather Normalization Adjustment (TN)	The Weather Normalization Adjustment is in effect from November through April and is based on the difference between actual and projected normal weather during the winter months using the weighted average base rate of temperature sensitive sales for each rate schedule, the heat sensitive factor, and actual and normal billing cycle heating degree days.
Purchased Gas Adjustment (TN)	This Rider is intended to apply to all Gas Costs incurred in connection with the purchase, transportation and/or storage of gas purchased for general system supply.
Performance Based Ratemaking (TN)	The Performance-Based Ratemaking Mechanism (PBRM) is designed to encourage the utility to maximize its gas purchasing activities at minimum cost consistent with efficient operations and service reliability. Each plan year will begin July 1. The PBRM establishes predefined monthly benchmark indexes to which the Company's commodity cost index is compared. Each month, the Company will compare its actual commodity cost of gas to the appropriate benchmark amount. The benchmark gas cost will be computed by multiplying the actual purchase of quantities for the month, including those quantities injected into storage, by the appropriate index. If the Company's commodity gas cost for the year does not exceed the benchmark by 1% then an audit will be waived. If the cost exceeds 2% then a report justifying or explaining the cost will be required.
Interruptible Margin Credit Rider (TN)	This Interruptible Margin Credit Rider is intended to authorize the Company to recover ninety percent (90%) of the gross profit margin losses that result from rates negotiated under the provisions of Special Service Rate Schedule SS-1 or from Customers who switch to alternate fuels where the Company is unable to meet alternate fuel competition. This Interruptible Margin Credit Rider is also intended to authorize the Company to recover not more than fifty percent (50%) of the gross profit margin that results from transactions with non-jurisdictional Customers that rely on the Company's gas supply assets (all such transactions including off-system sales) should such transactions be made by the Company. The gross profit margin loss is calculated as 90% of the difference between a Test Year Targeted Rate Margin (from most recent rate case) and the Actual Negotiated Rate Margin. Any amount of gross profit margin losses will be recovered from the firm commodity component of gas costs as determined under the Purchased Gas Adjustment Provision. Adjustments are determined annually.
Virginia	
Weather Normalization Adjustment Rider (VA)	This Rider represents a surcharge or credit to a customer's bill based on deviations in actual degree days from normal degree days. It is applicable to customers qualifying under Schedule 1 (Residential Firm Gas) or Schedule 3 (Residential Air Conditioning Firm Gas) and is calculated using the weighted average non-gas rate per Ccf, the Ccf use per customer per degree day, and the non-weather

	sensitive Ccf per customer and is in effect from November to April.
Experimental Weather Normalization Adjustment Rider for General Service Customers (VA)	This Rider represents a surcharge or credit to a customer's bill based on deviations in actual degree days from normal degree days. It is applicable to customers receiving service under Rate Schedule 2 – General Firm Gas Sales Service and Rate Schedule 4 – General Air Conditioning Firm Gas Sales Service and is calculated by multiplying the customer's Net Winter Usage by the percent deviation of actual degree days to normal degree days by the applicable Non-Gas Rate (a billing rate per Ccf equal to $0.2238). The Rider will be in effect from November through April.
Conservation and Ratemaking Efficiency Plan	As part of this plan, Virginia Natural Gas intends to invest approximately $7 million over three years in new conservation programs and to implement an accompanying decoupled rate design mechanism that will help to mitigate the impact of declining usage due to conservation and provide the utility with an opportunity to recover its fixed costs.
Proposed Mechanisms	
Rate Stabilization	AGL plans to seek rate reforms that encourage conservation and decoupling in upcoming rate cases. Elizabethtown - Filed in March 2009 for recovery of conservation programs and a proposed Efficiency Usage and Adjustment mechanism (EUA), which is a form of decoupling. In December 2009 the New Jersey BPU approved Elizabethtown's agreement, but a decision on the EUA was postponed until sometime during 2010.

Atmos Energy Corp.

Colorado	
Gas Cost Adjustment ("GCA")	The annual GCA reflects appropriate gas costs including Forecasted Gas Commodity Costs and Forecasted Upstream Service Costs incurred by the company. Includes collection of the gas cost portion of uncollectible accounts.
Transportation Gas Cost Adjustment ("TGCA")	Applicable to end users who receive service under a transportation rate schedule and who opt for AMR Electronic Metering Equipment.
Gas Demand-Side Management Cost Adjustment ("G-DSMCA")	Designed to prospectively recover prudently incurred costs of Demand-Side Management Programs.
Franchise Fee Surcharge	Percentage surcharge applied to the bill of each customer residing within a municipality that imposes a franchise fee / occupation tax upon the Company.
Advanced Metering Infrastructure Surcharge ("AMIS")	Allows for the adjustment of rates and charges to provide for the recovery of costs for the AMI Project. Costs include meter-mounted data transmitters, metering data reception/transmission equipment installed on or at a communications tower (including tower gateway base stations), regional network interfaces, software systems, capitalized employee labor and costs, and third-party contractor costs.
Georgia	
Purchased Gas Adjustment Rider	Intended to recover all of the company's Purchased Gas Costs incurred pursuant to an applicable Gas Supply Plan as well as any Gas Costs required to supply the demands of the company's customers.
Franchise Tax Recovery	Franchise fees imposed on the company will be assessed to each customer based on the customer's actual monthly bill.
Weather Normalization Adjustment Rider	Adjusts rates for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective October through May.
Pipe Replacement Surcharge	Increment of $3.04 per residential customer, $9.11 per commercial customer and $75.91 per industrial customer per month will be applied to customer charges effective October 1, 2009.
Margin Loss Recovery Rider	Recovers 40% of margin loss from firm customers, 35% from interruptible customers, and the company must absorb the remaining 25%.
Illinois	
Purchased Gas Cost Adjustment	Costs recoverable through the Gas Charge include costs of natural gas, costs for storage services, transportation costs, and any other out-of-pocket direct non-commodity costs.
Adjustment for State of Illinois Gross Receipts Tax	Tax rate of 0.1% net charge is applicable to all charges, including charges for gas service; service disconnections and reconnections; line extensions, relocations, installations, and replacements; meter relocation and jobbing. Tax rate of the lesser of 2.4 cents per Ccf or 5% of gross receipts received from each customer will apply to each customer

Iowa	
Purchased Gas Adjustment	Recovers the costs to the company for purchasing gas for delivery to its customers.
Take or Pay Adjustment	Recovers or refunds any changes in the cost of take or pay charges from suppliers.
Energy Efficiency Cost Recovery	Recovers the cost of energy efficiency programs.
Kansas	
Purchased Gas Adjustment	Recovers the average cost of gas from all sources of supply. The gas cost portion of uncollectible accounts is recoverable through the Actual Cost Adjustment.
Weather Normalization Adjustment	Adjusts rates for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective October through May
Ad Valorem Tax Surcharge	Recovers charges resulting from real estate and personal property taxes
Kentucky	
Gas Cost Adjustment	Recovers expected commodity costs and non-commodity costs including pipeline demand charges and gas supplier reservation charges.
Weather Normalization Adjustment	Adjusts revenues for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective November through April.
Experimental Performance Based Rate Mechanism	Provides sharing of gas commodity costs, gas transportation costs, and capacity release revenues that vary from established benchmarks.
Demand Side Management	Recovers costs of DSM programs as well as annual lost sales attributable to customer conservation/efficiency created as a result of the DSM programs.
Pipe Replacement Program Rider	Recovers PRP-related revenue requirement including plant in-service not included in base gas rates less accumulated depreciation and accumulated deferred income taxes, retirement and removal of plant-related PRP construction, rate of return on net rate base, depreciation expense, reduction for savings in O&M expenses, and adjustment for ad valorem taxes.
Louisiana	
Purchased Gas Adjustment	Provides monthly adjustment for the fluctuations in cost of gas purchased by the company
Rate Stabilization Clause	Increases or decreases rates so that earned ROE equals allowed ROE.
Weather Normalization Adjustment	Adjusts rates for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective December through March.

Mississippi	
Weather Normalization Adjustment Rider	Adjusts rates for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective November through April.
Stable Rate Adjustment Rider	Adjusts rates for the difference between the company's expected ROE and performance-based benchmark ROE. No adjustment for difference less than or equal to 100 basis points.
Purchased Gas Adjustment Rider	Recovers commodity costs and demand charges associated with the procurement of gas.
Missouri	
Purchased Gas Adjustment	Recovers costs associated with the procurement of gas including commodity, transportation and storage costs.
Tennessee	
Purchased Gas Adjustment Rider	Recovers costs associated with the procurement of gas including commodity, transportation and storage costs. Includes collection of the gas cost portion of uncollectible accounts.
Margin Loss Recovery Rider	Recovers not more than 90% of the gross profit margin losses that results from rates negotiated under Rate Schedule 291 or from customers who transfer from Rate Schedule 240 to optional service.
Performance Based Ratemaking Mechanism Rider	Encourages the utility to maximize its gas purchasing activities at minimum costs consistent with efficient operations and service reliability, and provides for shared savings or costs between customers and shareholders.
Weather Normalization Adjustment (WNA) Rider	Adjusts revenues for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective November through April.
Environmental Cost Recovery Rider (ECRR)	Recovers costs related to compliance with environmental control requirements imposed by various federal and state agencies.
Franchise Tax	Any franchise taxes imposed upon the company are collected by an addition to customers' bills.

Texas (West)	
Gas Cost Adjustment Rider	Recovers costs associated with the procurement of gas. Includes collection of the gas cost portion of uncollectible accounts.
Weather Normalization Adjustment	Adjusts revenues for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective October through May.
Rider RRM Rate Review Mechanism *(select jurisdictions)*	Adjusts rates for the difference between the company's authorized ROE and actual earned ROE.
Energy Efficiency Program Rider *(select jurisdictions)*	25% of energy efficiency expenditures will be considered in determining the company's annual earnings for RRM rate adjustment purposes.
Conservation and Energy Efficiency Rider *(select jurisdictions)*	50% of energy efficiency expenditures will be considered in determining the company's annual earnings for RRM rate adjustment purposes.
Pipeline Safety Program Fees	Recovers costs associated with the pipeline safety inspection program
Mid-Texas (Central/East)	
Weather Normalization Adjustment (WNA) Rider	Adjusts revenues for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective November through April
Gas Cost Recovery (GCR) Rider	Recovers gas costs and upstream transportation costs. Includes collection of the gas cost portion of uncollectible accounts.
Franchise Fee Adjustment (FF) Rider	Recovers municipal franchise fees imposed on the company by select municipalities.
Pipeline Safety Program Fees	Recovers costs associated with the pipeline safety inspection program
Conservation and Energy Efficiency (CEE) Rider	One million dollars provided by ratepayers to fund conservation and energy efficiency programs (one million dollars to be contributed by shareholders)
Rate Review Mechanism *(city groups A & B)*	Adjusts rates for the difference between the company's authorized ROE and actual earned ROE.
Tax Adjustment Rider	Recovers state gross receipts taxes imposed on the company.
Virginia	
Purchased Gas Adjustment	Recovers costs associated with the procurement of gas. Includes collection of the gas cost portion of uncollectible accounts.
Weather Normalization Adjustment	Adjusts revenues for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective January through December.

Laclede Group, Inc.

Missouri	
Infrastructure System Replacement Surcharge ("ISRS")	The ISRS recovers eligible infrastructure replacements on a fixed monthly basis.
Purchased Gas Adjustment Clause ("PGAC")	The PGAC automatically recovers commodity and non-commodity costs of delivered natural gas with a monthly reconciliation of actual as compared to projected eligible gas costs. The PGAC also incorporates a Gas Supply Incentive Plan, whereby the company will share in savings obtained through hedging activities if the actual commodity cost of natural gas for a given year meets certain benchmarks. The PGAC also recovers the carrying cost of natural gas inventory. All adjustments incorporated into the PGAC are reconciled on a monthly basis by comparing the previous months' actual gas costs with the revenue collected from the PGAC. Any balances incur carrying costs at the current prime rate minus two percent.
Residential Tariff Seasonal Structure	Laclede Gas' volumetric rates differ seasonally to incorporate a substantially higher rate for given consumption volume in winter as compared to summer volumetric rates.
Billing of License, Occupation, or Other Similar Charges or Taxes	Any license, occupation, or other similar charge or tax imposed upon the company is added to the customers' bills as a separate item.

New Jersey Resources Corp.

New Jersey	
Basic Gas Supply Service (Rider "A")	Recovers the overall commodity cost of all prospective gas supplies. Includes fixed pipeline, fixed storage, and supplier demand costs.
New Jersey Sales and Use Tax (Rider "B")	Multiplies the charges that would apply before application of the SUT by the factor 1.07.
Transitional Energy Facilities Assessment (Rider "B")	Temporary surcharge resulting from the energy tax reform statute.
Remediation Adjustment (Rider "C")	Provides for recovery of actual expenditures incurred to remediate former gas manufacturing facilities.
Weather Normalization Clause (Rider "D")	Adjusts revenues for the difference between Commission-authorized weather normalized revenues and actual revenues. Effective October through May.
New Jersey's Clean Energy Program (Rider "E")	Recovers costs associated with the program designed to promote energy efficiency and renewable energy.
Energy Efficiency (Rider "F")	Recovers authorized expenditures related to the energy efficiency programs as approved in BPU Docket No. GO09010057.
Universal Service Fund (Rider "H")	Fund established by BPU to provide affordable access for electric and natural gas service to all residential customers in the state.
Conservation Incentive Program (Rider "I")	Designed to decouple the link between customer usage and the company's gross margin to allow the company to encourage its customers to conserve energy. Also serves as a tracking mechanism that allows the company to mitigate the impact of weather on its gross margin. As a result, the WNC has been suspended pending the continuation of the CIP.
Other Incentive Programs	The company is eligible to receive financial incentives for reducing BGSS costs through a series of utility gross margin-sharing programs that include off-system sales, capacity release, storage incentive and financial risk management (FRM) programs.
Economic Stimulus	Accelerated Infrastructure Program (AIP) was approved on April 16, 2009 and allows the company to expedite \$70.8 million of 14 previously planned infrastructure projects. Approved as a 2-year program, the AIP will be funded through an annual adjustment to customers' base rates with the first adjustment expected in October 2010. On July 17, 2009 the BPU approved an Energy Efficiency Program and associated cost recovery mechanism. The mechanism will recover \$21.1 million over a 4-year period.

Nicor, Inc.

Illinois	
Straight-Fixed Variable Rate Design	Approved in March 2009 for Nicor Gas' Residential rate class, this rate structure recovers approximately 80 percent of the company's fixed delivery service costs through the monthly customer charge, while lowering the volumetric charge.
Franchise Cost Adjustment (Rider 2)	Recovers the cost of reduced rate service or other monetary contribution provided to local governmental units under a franchise agreement or other similar agreement with the company.
Storage Service Cost Recovery (Rider 5)	Recovery of storage service costs and carrying costs of the company's additional inventory with annual true-up of per therm charge.
Gas Supply Cost (Rider 6)	Automatic gas cost recovery for cost of gas, storage services, and transportation costs, including hydrocarbons used in the manufactured gas process.
Governmental Agency Compensation Adjustment (Rider 7)	Recovers fees and additional costs the company incurs as a result of requirements that may be imposed upon the company by a local governmental unit solely from those customers taking service from the company within the boundaries of each local governmental unit imposing such costs.
Adjustments for Municipal, Local Governmental Unit and State Utility Taxes (Rider 8)	Recovers the following additional charges: municipal tax on gross receipts levied on the company, local governmental unit tax on gross receipts levied on the company, municipal or local governmental unit tax based on a charge per unit of energy, and state tax based on a percentage of gross receipts or a charge per unit of energy.
Environmental Cost Recovery (Rider 12)	Automatic recovery of forecasted environmental survey, investigation, sampling, removal, disposal storage and remediation costs with respect to legacy manufactured gas operations.
Uncollectible Expense Adjustment (Rider 26)	Recovers or refunds the amount by which the company's actual annual uncollectible expense in a calendar year exceeds or is less than the uncollectible amount included in the company's delivery service rates in effect for the reporting year.
Energy Efficiency Plan (Rider 29)	The Energy Efficiency Plan recovers the actual costs to fund energy efficiency programs. Active for a four year period, unless reauthorized, the plan recovers the budgeted amount for each Plan Year and allows for carryover of budgeted amounts into subsequent years. Reconciliation period recovers deficiencies from the previous twelve month budgetary period over an eight month period.

Northwest Natural Gas Company

Purchased Gas Adjustment	Rate changes are established each year under PGA mechanisms in both Oregon and Washington to reflect changes in the expected cost of natural gas commodity purchases, including gas storage, gas purchases hedged with financial derivatives, interstate pipeline demand charges, the application of temporary rate adjustments to amortize balances in deferred regulatory accounts, increases in bad debt expense and the removal of temporary rate adjustments effective for the previous year.
Oregon	
PGA Incentive Sharing Mechanism	Under the Oregon PGA incentive sharing mechanism, the Company can select either an 80 percent deferral or 90 percent deferral of higher or lower gas costs such that the impact on current earnings from the gas cost sharing is either 20 percent or 10 percent, respectively.
Conservation Tariff (Partial Decoupling Mechanism)	Rate mechanism designed to adjust margin for changes in consumption patterns due to residential and commercial customers' conservation efforts. The decoupling mechanism that is intended to break the link between utility earnings and the quantity of gas consumed by customers, removing any financial incentive by the utility to discourage customers' conservation efforts. The conservation tariff includes a price elasticity adjustment and a conservation adjustment. The price elasticity adjustment adjusts rates annually for increases or decreases from expected customer volumes due to annual changes in commodity costs or periodic changes in general rates. The conservation adjustment is calculated on a monthly basis to account for the difference between actual and expected customer volumes.
Weather Normalization	Approved weather normalization through October 2012. This mechanism is designed to help stabilize the collection of fixed costs by adjusting residential and commercial customer billings based on temperature variances from average weather, with rate decreases when the weather is colder than average and rate increases when the weather is warmer than average. The mechanism is applied to residential and commercial customers' bills between December 1 and May 15 of each heating season. The mechanism adjusts the margin component of customers' rates to reflect average weather, which uses the 25-year average temperature for each day of the billing period.
Regulatory and Insurance Recovery for Environmental Costs	In 2003, the OPUC approved the deferral of unreimbursed environmental costs associated with certain named sites. Beginning in 2006, the OPUC authorized the Company to accrue interest on deferred environmental cost balances, subject to an annual demonstration that the Company has maximized its insurance recovery or made substantial progress in securing insurance recovery for unrecovered environmental expenses.
System Integrity Program	In 2004, the OPUC approved specific accounting treatment and cost recovery for a transmission pipeline integrity management program. The Company records these costs as either capital expenditures or regulatory assets, accumulates the costs over a 12-month period, and recovers the revenue requirement associated with the costs, subject to audit, through rate changes effective with the annual PGA. In February 2009, the OPUC approved a stipulated agreement to create a new, consolidated system integrity program (SIP). The SIP integrates the existing transmission pipeline and proposed distribution integrity management programs. The company's SIP costs are tracked into rates annually, with rate recovery after the first $3.3 million of capital costs. An annual cap for expenditures has been set

	at $12 million, but extraordinary costs above the cap may be approved with written consent of the OPUC and other interested parties.
Industrial Demand Side Management (DSM) Program Cost Recovery	Recovers the costs of the Company's Industrial Energy Efficiency Program. Effective November 1, 2010.
Automatic Adjustment for Utility Income Tax	Recovers rate differences between the amount of income taxes paid to units of government and the amount of income taxes collected through the company's approved base rates.
AMR Deferral	In February 2010, the OPUC approved a stipulation that allows the company to defer the revenue requirement associated with the AMR project and amortize that deferral subject to an annual earnings test. The company is permitted to recover the deferral amount as long as their ROE during the earnings review period does not exceed their authorized ROE. Recovery of any deferred amounts will begin in November 2010 as part of the annual PGA rate adjustment.
Billing for City and County Exactions	Recovers business or occupation taxes, license, franchise or operating permit fees, or similar exactions imposed by any city or county.
Washington	
Energy Conservation Programs Adjustment	Recover costs associated with providing energy conservation services offered under Residential High-Efficiency Furnace Program, Residential Weatherization and Energy Conservation Services Program, and Residential Low-Income Energy Assistance Program

Piedmont Natural Gas Company, Inc.

Purchased Gas Adjustment	Gas costs in all three jurisdictions are recoverable through PGA procedures and are not affected by the WNA or the margin decoupling mechanism. The company has incentive mechanisms for gas supply management whereby it retains 25% of secondary market margins generated through off-system sales and capacity release activity in all jurisdictions, with 75% credited to customers through the incentive plans. North Carolina - Purchased gas costs include all commodity/gas charges, demand charges, peaking charges, surcharges, emergency gas purchases, over-run charges, capacity charges, take-or-pay charges, or other similar charges in connection with the purchase, storage or transportation of gas. These costs are passed through to customers in the gas cost. In North Carolina and South Carolina, gas costs related to uncollectible accounts are recovered through the PGA. Tennessee - Adjustment is intended to permit the Company to recover the total cost of gas purchased for customers including costs incurred in connection with the purchase, transportation and/or storage of gas purchased for general system supply, including, natural gas purchased from interstate pipeline transmission companies, producers, brokers, marketers, associations, intrastate pipeline transmission companies, joint ventures, providers of liquefied natural gas (LNG). The gas cost portion of net write-offs for a fiscal year that exceed the gas cost portion included in base rates is recovered through PGA procedures.
North Carolina	
Margin Decoupling Mechanism	The margin decoupling mechanism provides for the recovery of the Company's approved margin from residential and commercial customers independent of consumption patterns. The margin decoupling mechanism was experimental for a three-year period, subject to semi-annual reviews and approval for extension in a future general rate case proceeding. In October 2008, the NCUC approved a settlement including the continuation of the margin decoupling mechanism.
Pipeline Integrity Management Costs	The NCUC approved deferral treatment of pipeline integrity management costs applicable to all incremental expenditures beginning November 1, 2004. Under the settlement of the 2008 general rate proceeding, the pipeline integrity management costs incurred between July 1, 2005 and June 30, 2008 of $4.6 million are being amortized over a three-year period beginning November 1, 2008.
South Carolina	
Natural Gas Rate Stabilization Act	Natural Gas Rate Stabilization Act (RSA) of 2005 became effective in South Carolina. The law provides electing natural gas utilities, including Piedmont, with a mechanism for the regular, periodic and more frequent (annual) adjustment of rates which is intended to: (1) encourage investment by natural gas utilities, (2) enhance economic development efforts, (3) reduce the cost of rate adjustment proceedings and (4) result in smaller but more frequent rate changes for customers. If the utility elects to operate under the Act, the annual filing will provide that the utility's rate of return on equity will remain within a 50-basis point band above or below the current allowed rate of return on equity.

Weather Normalization	WNA mechanism in South Carolina and Tennessee partially offsets the impact of colder- or warmer-than-normal weather on bills rendered in November through March for residential and commercial customers. The WNA formula calculates the actual weather variance from normal, using 30 years of history.
Tennessee	
Weather Normalization	WNA mechanism in South Carolina and Tennessee partially offsets the impact of colder- or warmer-than-normal weather on bills rendered in November through March for residential and commercial customers. The WNA formula calculates the actual weather variance from normal, using 30 years of history.
Performance Incentive Plan	Replaces the annual reasonableness or prudence review of the company's gas purchasing activities overseen by the TRA. The plan incentivizes improvements in the company's gas procurement and capacity management activities. The company's commodity cost of gas is compared to a predefined benchmark index. The plan also addresses the recovery of gas supply reservation fees and the treatment of off-system sales and wholesale interstate sale for resale transactions. Net incentive benefits or costs are shared between the company's customers and the company on a 75% - customers / 25% - stockholders basis.

South Jersey Industries, Inc.

New Jersey	
Basic Gas Supply Service Clause ("BGSSC")	BGSSC is calculated and trued-up annually and is designed to recover all gas costs including commodity costs, storage costs, interstate transportation costs (including the costs and results of any supplies set by hedges), fuel and line loss costs, and non-commodity gas-related costs. Non-commodity costs include fixed pipeline costs, fixed supplier costs, fixed storage costs, pipeline refunds and similar credits. At its discretion, the company may file for two self-implementing rate increases, effective December 1st and February 1st.
Capital Investment Recovery Tracker ("CIRT")	Utilized to adjust the company's monthly revenues in cases wherein the actual recoveries experienced vary from the calculated revenue requirement. It shall be utilized to earn a return on and a return of incremental infrastructure investments, including the capitalized costs related to CIRT projects. The revenue requirement will be calculated using projected data and be subject to a true-up at the end of the year. The CIRT will be applied through a volumetric rate and will be adjusted on or about each January 1st.
Transportation Initiation Clause ("TIC")	The purpose of the TIC is to enable the Company to recover both capital expenditures and operating costs associated with Electronic Data Interchange (EDI), including consulting costs and transaction costs. The TIC filing will be based upon the costs and expenditures incurred during the previous August 1 through July 31. The TIC is collected on a per therm basis.
Societal Benefits Clause ("SBC") (Encompasses NJCEP and USF)	The purpose of SBC is to enable the Company to recover the costs of the company's Clean Energy Program, manufactured gas plant remediation, Universal Service Fund Permanent and Lifeline Credits and Tenants Assistance program, and other allowed costs. Trued-up at the end of the year.
Temperature Adjustment Clause ("TAC")	(Replaced by the CIP, but still included in the Tariff). Utilized to adjust the company's revenues for unexpected fluctuations in temperature. This rider is utilized if the number of annual degree days in a year varies from the average by more than 0.5% of the 20 year cumulative normal degree days to adjust customers' bills. The degree day adjustment is multiplied by a degree day consumption factor to derive the volumetric adjustment. Allocated to customers on a volumetric basis. Only applies to October through May.
Remediation Adjustment Clause ("RAC")	Recovers gas manufacturing facility remediation costs. This adjustment is based on 12 months of historical costs and is trued-up annually through the SBC.
New Jersey Clean Energy Program ("CLEP")	The CLEP factor is calculated annually based upon the projected CLEP costs and an amount that accounts for revenue erosion divided by the projected therm sales. Trued-up on a yearly basis. This charge is assessed through the SBC.
SUT Clause ("SUTC")	The New Jersey Sales and Use Tax ("SUT") is included in all rates by multiplying the charges that would have applied before application of the SUT by a factor of 1.07.
Conservation Incentive Program ("CIP")	Utilized to adjust the company's revenues in cases wherein actual usage per customer experienced during an annual period varies from the baseline usage per customer. This adjustment is applied through a credit or surcharge to customers' bills during the adjustment period and incorporates under recoveries or over recoveries from the previous year. Baseline use per customer is set during base rate case proceedings.
Energy Efficiency Tracker ("EET")	The company shall record a return on and a return of investments in energy efficiency programs and recover all incremental operating and maintenance

	expenses of the programs. The EET rate will be calculated annually using projected data and subject to a true-up at the end of the EET year (September 30th). The EET is applied through a volumetric rate on customers' bills.
Pension and PBOP-	The BPU authorized SJG to recover costs related to postretirement benefits under the accrual method of accounting consistent with FASB Statement No. 106. Upon the adoption of FASB Statement No. 158 in 2006, SJG's regulatory asset was increased by $37.1 million representing the recognition of underfunded positions of SJG's pension and other postretirement benefit plans.

Washington Gas Light

Purchased Gas Adjustment Charge	Automatic gas cost recovery in all jurisdictions (MD, VA, and DC). Carrying cost on storage and over or under collected gas costs in all jurisdictions. In addition, WGL has asset management incentives in place in all jurisdictions. WGL's Gas Administrative Charge (GAC) is incorporated into each of the jurisdictions' PGAs and is designed to remove the cost of uncollectible accounts expense related to gas costs from base rates and instead collects these expenses under each jurisdiction's PGA.
Maryland	
Revenue Normalization Adjustment	Compares target for recent base-rate determination of revenues against all revenues adjusted for growth. This mechanism is a monthly adjustment that is comprised of two factors; 1) a "current factor' and a 2) a "reconciliation factor". The current factor utilizes the test-year non-gas revenue and adjusts that revenue for changes in the number of customers, by rate class, as compared with test year levels using a class-specific customer growth adjustment. The reconciliation factor is also computed monthly by comparing actual collections or credits with the calculated RNA amount and any applicable reconciling amount as filed. The calculated under-or-over collection is included in the RNA factor succeeding month.
Demand Side Management Surcharge Adjustment	Recovers the cost of demand side management expenditures from the prior annual period including utility expenditures, incentive payments to customers, lost margins from program savings and expenses not elsewhere recovered in rates. DSM adjustment is trued up at the end of the year through a reconciliation factor.
Virginia	
Performance Based Rates	PBR plan includes: (i) a four-year base rate freeze (beginning October 2007); (ii) service quality measures to be determined in conjunction with the VA Staff and reported quarterly for maintaining a safe and reliable natural gas distribution system while striving to control operating costs; (iii) recovery of initial implementation costs associated with achieving Washington Gas's BPO initiatives over the four-year period of the PBR plan and (iv) an ESM that enables Washington Gas to share with shareholders and Virginia customers the earnings that exceed a target of 10.5 percent return on equity.
Weather Normalization Adjustment (WNA)	WNA charge is calculated annually and trued up at the end of each year based on the difference between their actual usage and their base usage.
Conservation and Ratemaking Efficiency Plan	The plan calls for the creation of conservation and energy efficiency programs. Along with these programs an associated cost recovery provision and a decoupling mechanism, which adjusts weather normalized non-gas distribution revenues for the impact of conservation or energy efficiency efforts, are to be implemented.
Washington D.C	
PBR- Earnings	DC settlement includes rate freeze that enables Washington Gas to retain all

Sharing Mechanism	earnings in excess of 8.12% ROR through Oct 1, 2011.
Pension and OPEB	Recovery mechanism in place to recover Pension and OPEB costs.
Proposed Mechanisms	
Revenue Normalization Adjustment	Proposed RNA in Washington DC that is currently under review.

CALCULATION OF THE FAIR VALUE RATE BASE

Rate Base Estimate	Amount	Weighting	Weighted Amount	
Original Cost Rate Base (OCRB)	$1,073,700,633	50%	$ 536,850,317	[1]
RCND Rate Base	$1,839,334,300	50%	$ 919,667,150	[2]
Fair Value Rate Base (FVRB)			1,456,517,467	[3]
Appreciation above OCRB			382,816,834	[4]
FV/OCRB Multiple	1.36			

CALCULATION OF THE FAIR VALUE RATE OF RETURN

Capital	Amount	Percent	Cost Rate		Weighted Cost Rate	
Long-Term Debt	$ 512,155,202	35.16%	8.34%	[5]	2.93%	
Common Equity	561,545,431	38.55%	11.00%	[6]	4.24%	
Capital Financing OCRB	1,073,700,633	74.02%			7.17%	
Appreciation above OCRB not recognized on utility's books	382,816,834	26.28%	1.24%		0.32%	
Total	$ 1,456,517,467	100.00%			7.50%	[7]

Notes:
[1] Direct testimony of Robert Mashas
[2] Direct testimony of Robert Mashas
[3]=[1] +[2]
[4]=[3]-OCRB
[5] Schedule D-1
[6]= Recommended ROE on OCRB
[7] FVRB Return = OCRB Return - Inflation Rate

LONG-TERM INFLATION RATE ESTIMATE

Description (a)	Value (b)
Long-Term Nominal Treasury Rate [1]	5.01%
Real- Risk Free Rate of Return [2]	2.47%
Long-Term Expected Inflation Rate [3]	2.47%

[1] Inflation Rate = [(1+Nominal Rate)/(1+Real Rate)] - 1

Sources:
[1] Average of the near term and long term projected Nominal 30-Year Treasury rate.
Aspen Publishers Blue Chip Financial Forecast, Vol 6, June 1, 2010, p. 14 and Vol 10, October 1, 201
[2] Average of EIA Annual Energy Outlook Rate of Change in CPI from 2010-2035 and
Aspen Publishers Blue Chip Financial Forecast, Vol 6, June 1, 2010, p. 14.
[3] Real Risk Free Rate = ((1+Nominal Treasury Rate)/(Inflation +1)-1

SUMMARY OF COMPARABLE TRANSACTIONS

Announcement Date	Closing Date	Buyer	Acquired	States	Transaction Value ($MM)	Net Plant ($MM)	Net Plant Multiple
May-10	Pending	UIL Holdings Corp.	Berkshire Gas, CT Natural Gas, Southern CT Gas	CT, MA	$ 1,296	$ 1,213	1.1
Jul-08	Feb-10	Babcock & Brown	Dominion Peoples Natural Gas	PA	$ 780	$ 577	1.4
Jul-08	Oct-08	MDU Resources	Intermountain Gas Company	ID	$ 327	$ 190	1.7
Mar-08	Oct-08	UGI Corporation	PPL Gas Utilities Corp	PA	$ 268	$ 223	1.2
Jan-08	Jan-09	Continental Energy	Public Service of New Mexico Gas Co.	NM	$ 620	$ 447	1.4
Nov-07	Jul-08	SourceGas LLC	Arkansas Western Gas Co.	AR	$ 230	$ 133	1.7
Feb-07	Nov-07	Cap Rock Holding Corp	SEMCO Energy	MI, AK	$ 814	$ 591	1.4
Jan-07	Sep-07	Energy West, Inc	Frontier Utilities	NC	$ 5	$ 31	0.1
Jul-06	Jul-07	MDU Resources	Cascade Natural Gas	WA, OR	$ 475	$ 342	1.4
Feb-06	Aug-06	National Grid Plc	New England Gas - Rhode Island Ops	RI	$ 492	$ 581	0.8
Jan-06	Aug-06	UGI Corporation	PG Energy	PA	$ 556	$ 507	1.1
Sep-05	Jun-06	Empire District	Aquila Missouri Operations	MO	$ 85	$ 48	1.8
Sep-05	Jul-06	WPS Resources	Aquila Minnesota Natural Gas Ops	MN	$ 288	$ 44	6.5
Sep-05	Mar-06	WPS Resources	Aquila Michigan Natural Gas Ops	MI	$ 270	$ 165	1.6
			Mean				1.7
			Median				1.4

Source: SNL Financial, Company Proxy Statements, SEC Form 10-K, State LDC Filings

EXHIBIT
A-12

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
Docket No. G-01551A-10___

PREPARED DIRECT TESTIMONY
OF
EDWARD B. GIESEKING

ON BEHALF OF
SOUTHWEST GAS CORPORATION

NOVEMBER 12, 2010

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Prepared Direct Testimony
of
EDWARD B. GIESEKING

BEFORE THE ARIZONA CORPORATION COMMISSION

Prepared Direct Testimony
of
EDWARD B. GIESEKING

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Edward Gieseking. My business address is 5241 Spring Mountain Road, Las Vegas, Nevada 89150-0002.

Q. 2 By whom are you employed and in what capacity?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or the Company). My title is Director of the Pricing and Tariffs Department.

Q. 3 Please summarize your education and relevant professional qualifications.

A. 3 My education and relevant qualifications are summarized in Appendix A to my direct testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have testified before the following regulatory entities: Arizona Corporation Commission (Commission); California Public Utilities Commission (CPUC); Federal Energy Regulatory Commission (FERC); and the Public Utilities Commission of Nevada (PUCN).

Q. 5 What is the purpose of your prepared direct testimony?

A. 5 I support the Company's proposal to implement an energy efficiency enabling provision, the Company's rate design proposals, and I sponsor the H Schedules.

Q. 6 Please provide a brief summary of your prepared direct testimony.

A. 6 My prepared direct testimony addresses the following key issues:

- The Company's proposal for an energy efficiency enabling provision (EEP).
- Rate design, including the interplay between the Company's rate design proposal, EEP and the promotion of energy efficiency.
- Minor tariff changes that correct inconsistencies and update the tariff to reflect current business practices.

II. ENERGY EFFICIENCY ENABLING PROVISION

Q. 7 What is an energy efficiency enabling provision?

A. 7 An energy efficiency enabling provision or EEP is a revenue per customer decoupling mechanism that is designed to eliminate the link between sales and revenues that currently exists with traditional rate designs, so that the existing financial disincentive associated with Southwest Gas' pursuit of cost effective energy efficiency is eliminated. The result is that the utility's financial performance is not dependent on how much gas it delivers to its customers.

Q. 8 Why is Southwest Gas proposing the EEP?

A. 8 Consistent with the draft Gas Energy Efficiency Standards, the draft ACC Policy Statement Regarding Utility Disincentives to Energy Efficiency and Decoupled Rate Structures, and the numerous workshops organized by the Commission over the past two years, the Company is proposing the EEP to better align utility and customer interests so Southwest Gas will be able to sharpen its focus on customer efficiencies and the development of strategies to achieve the gas energy efficiency standards established by the Commission. To demonstrate its commitment to the Commission's directives regarding energy efficiency, Southwest Gas is including an implementation plan consistent with the Commission's draft Gas Energy Efficiency Standards as part of its general rate case application.

Q. 9 Please briefly explain how the EEP will function.

A. 9 The EEP is designed to be a single interface with customers whereby the customers bill will adjust each month when actual weather during the billing cycle differs from the average weather used in the calculation of rates, and rates will adjust annually to true-up the difference between authorized and experienced non-gas revenues. Southwest Gas believes this strikes a good balance between providing immediate weather-related rate relief to customers following extreme weather events, and allowing for annual adjustments to moderate the changes in rates that could otherwise occur.

Q. 10 Please explain the mechanics and accounting treatment for the EEP.

A. 10 The weather-related component will be provided through an adjustment to winter bills when actual weather during the billing cycle differs from the average weather used in the calculation of rates. In the event of an extreme cold weather event, customers will receive an immediate real-time benefit as there will be a downward adjustment to their bill.

The annual true-up will reflect the difference between authorized revenue and the experienced non-gas revenues. Authorized revenue is defined as the Commission-authorized monthly revenue per customer multiplied by the total number of customers billed for service during the month. Experienced revenue is defined as the billed revenue for the month. At the end of each year, a per-therm rate adjustment will be computed by dividing the balance in the deferred account by the previous 12 months sales volume. The resulting rate will remain in effect for a 12-month period to refund or collect the deferred account balance. Using 12-months recorded use will moderate the changes in rates that could otherwise occur, but will, on an annualized basis, clear the deferred account balance. This type of decoupling is commonly referred to as revenue per customer.

Accounting records and schedules showing the rate calculations will be maintained to clearly document the monthly entries and calculations and provide an auditable record of the EEP. Southwest Gas has prepared a new Tariff Schedule, that further reflects the accounting and rate adjustment procedures associated with the EEP.

Q. 11 Does the EEP treat customers that were added after the rate case test period different from customers that were taking service during the test period?

A. 11 No. All of the customers subject to the EEP are treated the same. Equal treatment under the mechanism is appropriate for two reasons. First, "new" customers may consist of individuals who actually occupy existing dwellings and will be using the facilities that are included in the rate base used to establish rates in this proceeding. Second, "new" customers that are incremental additions after the end of the test period as the result of new construction have been added pursuant to Southwest Gas' service extension policies. Service extension policies limit the investment in new facilities up to an amount that is supported by the expected revenue from the new customer. As a result, the service extension policies place existing and new customers on equal footing with regard to the Company's cost of providing service.

Q. 12 Will the EEP result in the Company over-earning?

A. 12 No. The EEP will not, in and of itself, result in the Company over-earning. To the contrary, the EEP results in a change from a fixed rate regulatory model to a fixed revenue per customer model. Indeed, Southwest Gas customers will benefit as a result of this change because it results in a cap being created on how much revenue per customer the Company is allowed to collect in rates. The Company will not be able to collect more revenue per customer than what the Commission authorizes in this rate case proceeding. With the implementation of the EEP, the Company's actual profits remain closely tied to its management of costs, providing additional incentive to efficiently manage costs. This also benefits customers because reductions in costs are passed on to customers in subsequent rate cases.

It is important to recognize that the EEP prevents the Company from recovering more revenue per customer than what is authorized by the Commission. For example, the PUCN approved a decoupling mechanism in Nevada last year and Southwest Gas is currently preparing a filing that will return approximately $2 million to its customers.

Q. 13 Does the EEP eliminate business risk?

A. 13 No. The EEP does not eliminate business risk; it simply eliminates the financial disincentive associated with reducing sales and counterbalances the additional business risk associated with achieving the Commission's energy efficiency directives. The EEP eliminates the need for management to focus on sales and allows management to concentrate its attention on the cost of providing service. While prudent management regarding the operation of the business will have an impact on the Company's opportunity to earn its authorized rate of return, some cost are beyond the control of management.

Q. 14 Will the EEP negatively impact customers through large surcharges?

A. 14 No. As discussed at great length during the Commission's workshops, rate adjustments associated with revenue decoupling tend to be small. This fact is consistent with the findings of Pamela Lesh, in her comprehensive review of decoupling mechanisms[1], where she concludes that "decoupling adjustments tend to be small, even miniscule." Ms. Lesh further concluded in her report that a majority of the monthly adjustments from decoupling mechanisms for

[1] *See* Pamela G. Lesh, *Rate Impacts and Key Design Elements of Gas and Electric Utility Decoupling, A Comprehensive Review* (2009).

natural gas utilities were less than 1 percent.

Although Southwest Gas does not anticipate that the annual EEP adjustment will result in a large surcharge, the Company has designed the mechanism to limit any single increase in customer rates to no more than six percent of revenues. There is no limit to any downward adjustment in rates.

Based upon the empirical data and testimony presented during the course of the Commission workshops on decoupling, the evidence supports the conclusion that the potential rate impact from revenue decoupling is minimal and is in fact significantly less than the potential $0.15 per therm variation that Southwest Gas customers could experience with a change in gas costs recovered through its existing fuel adjustment provision. In addition, it is important to not lose sight of the fact that the EEP protects customers by preventing an over-collection of revenue as compared to what the Commission authorized – even when it is colder than normal. This protection does not exist under the current Arizona regulatory structure.

Q. 15 Will the EEP discourage conservation by customers?

A. 15 No. The EEP does not establish a "fixed bill" that would make customers indifferent to the amount of gas they use. Customer bills will remain dependent on actual consumption as long as a volumetric pricing scheme is employed by the Commission. Indeed, customers' bills will continue to increase when their consumption increases and decrease when their consumption decreases.

The EEP will result in small, regular rate adjustments to ensure against over- or under-recovery of the Company's Commission-approved cost of service. Monthly recovery of the EEP true-up in a per-therm charge is consistent with a policy of having those who use more, pay more of the fixed cost of service and will send appropriate price signals to customers to use energy more efficiently.

Q. 16 How does the EEP facilitate Southwest Gas' ability to harmonize rate design and the promotion of energy efficiency?

A. 16 The EEP makes it possible for Southwest Gas to propose recovery of its revenue deficiency in a different way than it has in the past. Without the revenue stability provided by the EEP, Southwest Gas deemed it necessary to seek recovery of a portion of its customer and demand-classified revenue requirement deficiency in the monthly basic service charge (BSC). In this proceeding, because of the revenue stability provided by the EEP, Southwest Gas is proposing to recover the entire revenue deficiency in variable charges – leaving the BSCs at the current levels, for example the Single Family Residential rate at $10.70.

Q. 17 Which of the Company's Arizona rate schedules will be subject to the EEP?

A. 17 The Company proposes to have the EEP apply to the rate schedules where Southwest Gas has, or expects to have, usage-lowered as a result of energy efficiency programs and where a large amount of the fixed cost of service is recovered in variable charges. Under this criterion, the EEP will be applicable to the residential, and small, medium and large general service customer classes.

Q. 18 Which of the Company's Arizona rate schedules will not subject to the EEP, and why?

A. 18 Southwest Gas does not recommend applying the EEP to customer classes where the link between sales and revenue has already been effectively eliminated through rate design, nor does Southwest Gas recommend decoupling for customer classes with a limited number of customers. As a result, Southwest Gas proposes that the EEP not apply to the following schedules: 1) Transportation Eligible General Service and Street Lighting -

because the rate structure for these schedules has effectively decoupled their allocated revenue requirement; 2) Small Essential Agricultural, Air-conditioning, Water Pumping, Electric Generation and Gas Service for Compression - because there are only a small number of customers served in each of these classes; and 3) Customers served under negotiated rates and contract terms (or special contract customers). This is consistent with the Commission's draft policy statement.

Q. 19 What efforts will Southwest Gas make to inform its Arizona customers about the EEP?

A. 19 Similar to the communication plan Southwest Gas prepared to inform its Nevada customers of the PUCN's recently enacted decoupling mechanism, a copy of which was provided to the Commission during one of the aforementioned workshops, Southwest Gas will prepare communication materials that explain how the EEP changes the relationship between the Company and its customers. The primary message to customers is that the EEP provides Southwest Gas the opportunity to partner with them in an effort to use gas more efficiently, reduce overall energy consumption, and lower energy bills.

<u>III. RESIDENTIAL RATE DESIGN</u>

Q. 20 What considerations directed Southwest Gas' proposed residential rate design?

A. 20 Southwest Gas considered the following objectives in designing the residential rates proposed in this application: 1) the fair and equitable recovery of costs; 2) rates that work well in tandem with the EEP; 3) customer acceptance and understandability; and 4) the effect of the rate design on the promotion of the Company's energy efficiency and conservation efforts.

Q. 21 Please explain how the concepts of fairness and equality affected Southwest Gas' rate design decisions.

A. 21 Almost 100% of Southwest Gas' cost of providing service is fixed and does not increase or decrease when customer consumption changes. These fixed costs are classified as customer- and demand-related. Customer costs are incurred as a result of connecting a customer to the distribution system, and are relatively the same for all residential customers. Demand costs are determined by how much gas a customer needs during the peak demands on the distribution system. When customer and demand-related fixed costs are recovered through variable charges, Southwest Gas will not recover the full cost of providing service from low use customers, and will recover more from high use customers than it cost to provide them service. If this shift of cost responsibility amongst similarly situated customers becomes too great, the fairness and equality of the rate design come into question. A fully cost-based rate design would recover the entire customer and demand costs in a monthly fixed charge. However, Southwest Gas' proposed rate design balances cost of service rate principles with the recognition of past Commission policy and decisions requiring that a certain portion of the fixed cost of service be collected in the variable charge.

Q. 22 How does Southwest Gas' proposed rate design accomplish the objective of working in tandem with the EEP?

A. 22 Cost-of-service based rates recognize the difference between fixed and variable costs associated with providing service and have fixed rates that recover the fixed costs, and variable rates that recover the variable costs. However, traditionally gas distribution rate design has compromised cost-based factors, with some portion of the fixed cost-of-service being recovered through volumetric rates. The greater this compromise, the greater the potential that actual cost recovery will vary from the authorized cost-of-service.

As previously stated, Southwest Gas is not proposing a full cost-of-service fixed charge in this proceeding. The basic service charges are unchanged and the entire residential revenue deficiency is recovered in the variable charge, which will facilitate providing customers an incentive to be more energy efficient. Although Southwest Gas' proposed rates do not recover all fixed costs in fixed monthly charges, its basic service charges ensure that some fixed costs are recovered in fixed charges, and mitigate deferrals associated with the EEP.

Q. 23 How does Southwest Gas' proposed residential rate design achieve the objective of customer acceptance and understandability?

A. 23 Southwest Gas is proposing to retain the monthly basic service charge and single commodity charge of its current rate design, and simply adjust the commodity rates to recover the proposed residential revenue requirement. The Company's Arizona customers have had two years of experience with the current rate design, and will likely have almost three years of experience when the rates approved in this case become effective. Accordingly, some level of understandability and acceptance can be attributed to experience and the passage of time.

Southwest Gas' customers are also accustomed to periodic rate adjustments between rate cases. For example, the gas cost rate is adjusted monthly, the gas cost surcharge is adjusted as necessary, and various other surcharges are adjusted annually. Southwest Gas concluded that retaining the current rate design and introducing the EEP would not increase the likelihood of customer confusion, that customer acceptance and understandability would not be negatively impacted, and that the introduction of the EEP would be readily accepted with proper customer education.

Q. 24 Does Southwest Gas' proposed residential rate design enhance the effectiveness of energy efficiency and conservation efforts?

A. 24 Yes. Southwest Gas' proposed residential rate design balances the distribution of its requested residential revenue increase between the fixed charge and variable charge components. As a result, customers of various consumption levels experience a similar percentage increase in their bills while sending all customers, particularly larger use residential customers, a strong price signal to use natural gas more efficiently.

Q. 25 What are the other elements of Southwest Gas' residential rate proposal?

A. 25 Southwest Gas is proposing to expand the twenty percent (20%) discount provided to its low-income customers to include all usage during the winter months of November through April. The discount currently applies only to the first 150 therms of monthly consumption. The Company's analyses show that less than one percent (1%) of low-income customer usage exceeds 150 therms a month. This change will not only simplify the Company's low-income rates, but will provide its low-income customers with an additional benefit without significantly impacting its non-low-income customers. In Southwest Gas' Arizona service area, low-income customers use nearly the same amount of gas, on average, as non-low-income customers; the result is that, on average, low-income customers with the same average monthly use of 25 therms will see winter bills approximately 28% lower than they would otherwise.

In addition, Southwest Gas is tying the summer season residential air-conditioning rate under Schedule No. G-15 to the air-conditioning rate provided under Schedule No. G-40. Since Southwest Gas has a very small number of customers currently taking this service, it has little cost data to perform a meaningful cost study. Therefore the distribution rate calculated for Schedule G-40 is being utilized as a proxy for the cost of providing this service to residential customers with installed natural gas cooling equipment.

IV. GENERAL SERVICE RATE DESIGN

Q. 26 What rate design changes is Southwest Gas proposing for its non-residential customers?

A. 26 In order to better align the recovery of margin with the costs of providing service, Southwest Gas seeks to refine its Large General Service schedule, Schedule No. G-25. Currently, this schedule applies to customers that use between 7,201 and 180,000 therms per year. Southwest Gas' analysis of the cost of providing service shows a large difference between the cost to serve the smaller customers in this class versus the cost to serve the larger customers. Therefore, Southwest Gas is proposing to further define its general service customers by breaking the currently existing large class into two separate classes. The new class General Gas Service Large-1 is comprised of customers that use more 7,200 and up to 50,000 therms per year. The new class General Gas Service Large-2 is comprised of customers that use more than 50,000 and up to 180,000 therms per year. Further defining this class allows a better allocation of cost and a fairer rate design.

Q. 27 What schedules illustrate the impact of the Company's rate design proposals on its customers?

A. 27 Statement H reflects the impact of Southwest Gas' proposed changes in revenue by rate schedule, bill comparisons at present and proposed rates by customer class at various consumption levels, and the inputs used to develop Southwest Gas' proposed rates.

V. OTHER TARIFF CHANGES

Q. 28 Is Southwest Gas proposing any other tariff changes?

A. 28 Yes. In addition to the tariff changes necessary to effect the proposed rate design changes discussed above, Southwest Gas is proposing the following changes:

- Close rate Schedule No. G-75, Small Essential Agricultural Gas Service to new customers. For the past several rate cases Southwest Gas has been moving toward eliminating this rate schedule by moving customers from Schedule No. G-75 to Schedule No. G-25, General Gas Service where it benefits the customer. In this case, Southwest Gas has continued this process by reclassifying 42 customers from Schedule No. G-75 to Schedule No. G-25. There are now only 51 customers remaining on Schedule No. G-75, and Southwest Gas seeks to close the schedule to new service; and
- Implement a variety of minor tariff "housekeeping" changes to clarify and improve Southwest Gas' tariff. These include the Applicability and Special Conditions sections of Schedule No. G-40, the Applicability section of Schedule No. G-55, the Applicability section of Schedule No. G-60, the Applicability section of Schedule No. G-80, the Rates section of Schedule No. T-1, the Applicability, Rates and Special Conditions sections of Schedule SB-1, and the Customer Responsibility section of Rule No. 7. Please refer to the Company's proposed revised tariff for additional detail filed concurrently herewith in Volume I of Southwest Gas' rate application.

Q. 29 Does this conclude your prepared direct testimony?

A. 29 Yes.

SUMMARY OF QUALIFICATIONS
EDWARD B. GIESEKING

I graduated from Sonoma State University in 1985 with a Bachelor of Arts degree in Business Management and from New Mexico State University in 1993 with a Master of Arts degree in Regulatory Economics.

From 1983 through 1993, I was employed by Pacific Gas and Electric Company in various capacities, including the position of Regulatory Analyst in the Revenue Requirements and Rates departments. My responsibilities as a Regulatory Analyst primarily involved the development of pricing structures and supporting rate requests before the California Public Utilities Commission.

I began my career with Southwest as a Specialist in the Rates department in 1993. I was assigned responsibility for monitoring and participating in California regulatory activity and reporting impacts to Company management. In 1995 I was promoted to Senior Specialist in the Regulatory Affairs department and subsequently promoted to Manager of the department in 1998. In addition to the day-to-day management of the department, my responsibilities included the supervision of regulatory filings to ensure timely and accurate submittals, and serving as the Company liaison with state regulatory agency and state consumer advocate professionals.

In August 2002, I was promoted to the position of Senior Manager of the Pricing and Tariffs department and in July 2003 was promoted to my current position.

EXHIBIT
A-13

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
Docket No. G-01551A-10___

PREPARED DIRECT TESTIMONY
OF
BOBBI J. STERRETT

ON BEHALF OF
SOUTHWEST GAS CORPORATION

NOVEMBER 12, 2010

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of
Prepared Direct Testimony
of
Bobbi J. Sterrett

BEFORE THE ARIZONA CORPORATION COMMISSION

Prepared Direct Testimony
of
<u>BOBBI J. STERRETT</u>

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Bobbi J. Sterrett. My business address is 5241 Spring Mountain Road, Las Vegas, Nevada 89150.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or the Company). My title is Supervisor of the Conservation and Demand Side Management Department.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 No.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I sponsor the Company's Energy Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan that was prepared pursuant to the guidelines set forth in the draft gas energy efficiency standards that have been approved by the Arizona Corporation Commission (Commission).

II. OVERVIEW OF SOUTHWEST GAS' ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE TECHNOLOGY PROGRAMS

Q. 6 Why is Southwest Gas proposing a new portfolio of energy efficiency (EE) and renewable energy resource technology (RET) programs in conjunction with the current application?

A. 6 Southwest Gas is proposing a portfolio of EE and RET programs to provide and encourage EE and RET opportunities with 10 different programs that will result in cost-effective energy savings, advance market transformation and achieve sustainable savings, reducing the need for future market interventions. Furthermore, if the proposed portfolio of programs is approved, a greater number of Arizona customers will have the opportunity to participate in EE and RET programs, and enjoy reduced energy consumption and lower utility bills.

Q. 7 Please identify the market segments Southwest Gas intends to reach with the programs included in its implementation plan.

A. 7 Southwest Gas intends to target three distinct market segments - residential, non-residential, and low-income. Southwest Gas has designed programs to target these three market segments using a common branding through the use of Southwest Gas' energy efficiency tag-line, *Smarter Greener Better*.

Q. 8 What programs are designed to target the residential market?

A. 8 The Residential Energy Management Programs, which include three different programs: (1) *Smarter Greener Better* Residential Rebates, (2) *Smarter Greener Better* Homes, and a (3) *Smarter Greener Better* Residential Energy Assessments Program. For additional information regarding each of these programs and each of the applicable measures, please refer to the Company's implementation plan filed concurrently herewith as Volume II to Southwest Gas' rate application.

Q. 9 What programs are designed to target the non-residential market?

A. 9 The non-residential market will be targeted with four different programs: (1) *Smarter Greener Better* Business Rebates; (2) *Smarter Greener Better* Custom Business Rebates; (3) *Smarter Greener Better* Business Energy Assessments; and (4) *Smarter Greener Better* Distributed Generation. For additional information regarding each of these programs and each of the applicable measures, please refer to the Company's implementation plan filed concurrently herewith as Volume II to Southwest Gas' rate application.

Q. 10 What programs are designed to target low-income customers?

A. 10 Southwest Gas is proposing a *Smarter Greener Better* Low-Income Energy Conservation (LIEC) program. This program focuses on assisting low-income residential customers that lack the financial resources to invest in energy efficiency measures. Assistance to low-income customers is provided through two components, weatherization and bill assistance. For additional information regarding this program, please refer to the Company's implementation plan filed concurrently herewith as Volume II to Southwest Gas' rate application.

Q. 11 What RET programs is Southwest Gas proposing?

A. 11 Southwest Gas is proposing a *Smarter Greener Better* Solar Thermal Rebates Program, in which rebates will be offered to both residential and non-residential customers on qualified solar thermal systems upon proof-of-purchase and installation. Through this program, the Company's objective is to increase public awareness of the benefits of using renewable energy through the use of solar thermal systems to reduce customer natural gas usage by providing economically beneficial rebates to install the systems. For additional information regarding this program, please refer to the Company's implementation plan filed concurrently herewith as Volume II to

Southwest Gas' rate application.

Q. 12 Is Southwest Gas proposing any other programs?

A. 12 Yes. Southwest Gas is proposing a *Smarter Greener Better* Energy Education Program as a means to provide customers with energy efficiency and conservation information and education. The Company expects that providing educational awareness and encouraging conservation behaviors will generate savings for the portfolio of EE and RET programs. For additional information regarding this program, please refer to the Company's implementation plan filed concurrently herewith as Volume II to Southwest Gas' rate application.

Q. 13 How will Southwest Gas recover the costs of the approved programs?

A. 13 Southwest Gas is requesting to continue its current Demand-Side Management Adjustor Mechanism to recover the costs of the programs.

Q. 14 Did Southwest Gas study the cost-effectiveness of the programs included within the current portfolio?

A. 14 Yes. Consistent with the draft gas EE standards, Southwest Gas used the Societal Test to evaluate cost-effectiveness at the program level.

Q. 15 Does Southwest Gas' proposed implementation plan establish a foundation for the Company to achieve the energy savings goals established by the Commission in the draft gas EE standards?

A. 15 Yes. Southwest Gas' proposed implementation plan establishes a foundation to achieve the savings goals set forth in the Commission's draft gas EE standard.

Q. 16 Does this conclude your prepared direct testimony?

A. 16 Yes.

SUMMARY OF QUALIFICATIONS
BOBBI J. STERRETT

I graduated from the University of Nevada, Las Vegas in 1994 with a Bachelor of Science degree with a major in marketing. In 1999, I earned a Masters of Business Administration from Webster University.

I have been employed at Southwest since 1995 and have held various positions throughout my career with the Company. From 1995 to 1996, I was employed as a Customer Representative I in Customer Assistance at the Southern Nevada Division. My primary role was to assist customers with billing information and service scheduling.

In 1996, I transferred to the Energy Services department at Southwest's corporate headquarters as a Customer Representative II. In this position, I advised customers about ways to save energy and also provided referrals for licensed HVAC and plumbing contractors, along with appliance dealers where natural gas equipment was sold.

In 1998, I joined the Demand Side Management (DSM) department, as an Analyst II/Marketing. Subsequent promotions in DSM entailed Specialist/Marketing in 2002, Specialist/State Regulatory Affairs in 2005 and Sr. Specialist/State Regulatory Affairs in 2006. My job duties entailed assisting in the preparation of DSM program filings and reporting, along with the daily management of DSM and low-income programs for Southwest's tri-state service territory.

In 2008, I was promoted to my current position as Supervisor of Conservation and DSM/State Regulatory Affairs. My responsibilities include overseeing the development, implementation, promotion, and reporting of the DSM programs, as well as conducting research activities and representing the Company in various regulatory proceedings concerning conservation and energy efficiency issues.

EXHIBIT
A-14
ADMITTED

ORIGINAL

BEFORE THE ARIZONA CORPORATION COMMISSION

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AZ CORP COMMISSION
DOCKET CONTROL

Arizona Corporation Commission
DOCKETED
JUL 15 2011
DOCKETED BY

COMMISSIONERS
GARY PIERCE - Chairman
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF SOUTHWEST GAS CORPORATION FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTIES THROUGHOUT ARIZONA.

DOCKET NO. G-01551A-10-0458

STAFF'S NOTICE OF FILING

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby provides notice of filing the Proposed Settlement Agreement ("Agreement") in the above-referenced matter. The Exhibits to the Agreement will be filed on or before July 29, 2011.

RESPECTFULLY SUBMITTED this 15th day of July, 2011.

Robin R. Mitchell, Staff Counsel
Wesley C. Van Cleve, Staff Counsel
Ayesha K. Vohra, Staff Counsel
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402

Original and thirteen (13) copies of the foregoing were filed this 15th day of July, 2011, with:

Docket Control
Arizona Corporation Commission
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Phoenix, Arizona 85007

Copies of the foregoing were mailed this 15th day of July, 2011, to:

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Ashley Hodge

SOUTHWEST GAS CORPORATION

PROPOSED SETTLEMENT AGREEMENT

DOCKET NO. G-01551A-10-0458

JULY 15, 2011

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PROPOSED SETTLEMENT OF DOCKET NO. G-01551A-10-0458
SOUTHWEST GAS CORPORATION REQUEST FOR RATE ADJUSTMENT

The purpose of this Settlement Agreement ("Agreement") is to settle disputed issues related to Docket No. G-01551A-10-0458, Southwest Gas Corporation ("Southwest Gas" or "Company") application to increase rates. This Agreement is entered into by the following entities:

Arizona Corporation Commission Utilities Division ("Staff")
Arizona Investment Council ("AIC")
Cynthia Zwick
Southwest Energy Efficiency Project ("SWEEP")
Southwest Gas Corporation ("Southwest Gas" or "Company")
Natural Resources Defense Council ("NRDC")

These entities shall be referred to collectively as "Signatories;" a single entity shall be referred to individually as a "Signatory."

The following numbered paragraphs comprise the Signatories' Agreement.

I. RECITALS

1.1 This Agreement (with the Commission's selection of either Alternatives A or B, in each alternative's entirety) resolves all issues presented in Docket No. G-01551A-10-0458 in a manner that will promote the public interest.

1.2 On November 12, 2010, Southwest Gas filed an application requesting approval of: (i) a general rate increase for its Arizona rate jurisdiction; (ii) its proposed Energy Efficiency Enabling Provision; (iii) its proposed Energy Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan ("EE and RET Plan") and corresponding budget; (iv) its proposed pilot program for customer owned yard lines ("COYL") and a deferred accounting order; (v) a deferred accounting order for the costs associated with replacement of Aldyl HD pipe as part of the Company's 20 year plan to replace all early vintage plastic pipe ("EVPP"); and (vi) various proposed amendments to its Arizona gas tariff ("Application").

1.3 The Commission approved the applications to intervene filed by the Residential Utility Consumer Office ("RUCO"), Tucson Electric Power ("TEP"), Cynthia Zwick, AIC, SWEEP and NDRC (collectively referred to as "Parties to this Docket").

1.4 Staff, RUCO, and Cynthia Zwick filed direct testimony June 10, 2011. Staff, RUCO, NRDC, and SWEEP filed direct rate design testimony June 24, 2011.

1.5 Southwest Gas filed a Notice of Settlement Discussions June 21, 2011. The Parties to this Docket subsequently held settlement discussions beginning June 28, 2011 and continuing through July 14, 2011.

1.6 The settlement discussions were open, transparent, and inclusive of all parties to this docket who desired to participate. All Parties to this Docket were notified of the settlement discussions, were encouraged to participate in the negotiations, and were provided an opportunity to participate either in person or via teleconference.

1.7 The Signatories agree that they have reached a compromise and agreement that resolves all outstanding and contested issues that were raised during the course of this proceeding. The Signatories believe that the terms and conditions of this Agreement (inclusive of Alternatives A and B as presented) are just, reasonable, and fair, and that the Agreement promotes the public interest.

1.8 This Agreement results in a settlement package that addresses Southwest Gas' need for a rate increase and balances this need with terms and conditions that provide several specific customer benefits. The Signatories submit that many benefits of this negotiated settlement package would not otherwise have been accomplished through a litigated proceeding. Some of these customer benefits include but are not limited to:

- Commitments Benefiting Low Income Customers on the low income rate schedule(s).
    - An increased Low Income Rate Assistance discount from 20 percent to 30 percent for the low income rate schedule(s).
    - A Southwest Gas commitment to increase funding for Low Income Energy Conservation Weatherization program with non-ratepayer funds of at least $1 million over 5 years.
    - A commitment to develop enhanced communication programs to increase awareness of low-income programs.

- Rate Stability.
    - Approval of a decoupling mechanism to improve Southwest Gas' revenue stability, which, in turn has a positive impact on its financial profile and credit ratings - benefiting customers through reductions in future debt costs.
    - Approval of decoupling mechanisms to mitigate rate increases in future rate proceedings and reduce the frequency of time consuming and expensive rate cases.
    - A moratorium on general rate case applications for over five years – reflected in Alternative B only.
- An operating Expense Reduction Commitment of $2.5 million per year.
- Continuation of a 20-Year Plan to Replace Early Vintage Plastic Pipe.
- The Establishment of a Customer Owned Yard Line Replacement Program.
- Energy Efficiency Enhancements.
    - Energy Efficiency initiatives resulting in customer annual energy savings of at least 1,250,000 therms.
- Implementation of a decoupling mechanism.
    - To align utility, customer and societal interests to pursue annual customer bill savings through the recently enacted gas energy efficiency goals – reflected in Alternatives A and B.
    - Reducing utility disincentives to support customer energy efficiency.
    - Prompt protection of customers from high winter monthly bills following extreme weather events as reflected in Alternatives A and B.
- Rate Design.
    - No increase to the monthly basic service charge to enhance customer bill savings through energy efficiency and conservation efforts.

1.9 The Signatories request an order from the Commission: (i) finding that the terms and conditions of this Agreement are just and reasonable; (ii) concluding that the Agreement is in the public interest; (iii) approving the Agreement in its entirety (including the selection of only either Alternative A or B in each alternative's entirety) and ordering that the terms and conditions therein become effective upon Commission approval; and (iv) making any and all other findings and orders in support of this Agreement that the Commission deems necessary.

1.10 Consistent with Arizona Administrative Code ("A.A.C.") R14-2-103, the Signatories request the issuance of a Commission order approving this Agreement with an effective date of new rates no later than January 1, 2012.

II. SUMMARY OF FILED REVENUE POSITIONS

2.1 The Company's application and supporting testimony requested approval, *inter alia,* of a revenue increase of $73.2 million. The requested capital structure consisted of 52.3 percent common equity and 47.7 percent long-term debt, relative to an 8.34 percent embedded cost of long-term debt and a cost of common equity capital of 11.00 percent. Southwest Gas also requested a fair value rate of return ("FVROR") of 7.50 percent using a 1.24 percent inflation-adjusted risk-free return on the fair value increment (the differential between the fair value rate base ("FVRB") and the original cost rate base ("OCRB")).

2.2 Staff made several recommendations pertaining to the Company's proposed rate base, expenses, revenues, and net operating income resulting in a recommended revenue increase of $54.9 million. Staff agreed with the Company's capital structure and embedded cost of long-term debt, but recommended a cost of common equity capital of 9.75 percent and a FVROR of 7.02 percent using a 1.25 percent inflation-adjusted risk-free return on the fair value increment (differential between FVRB and OCRB).

2.3 In its direct testimony, RUCO recommended a revenue requirement increase of approximately $29.2 million. For its cost of equity, RUCO recommended a 9.00 percent cost of equity. The recommended RUCO capital structure consists of 50.15 percent common equity and 49.85 long-term debt with a cost of long-term debt of 7.35 percent.

III. AGREEMENT ON TWO ALTERNATIVES FOR REVENUE DECOUPLING

3.1 Because of the unique circumstances presented by the revenue decoupling proposals offered in this proceeding, the Signatories have agreed to present to the Commission two alternatives (Alternative A and Alternative B), as set forth in more detail below. It is the intent of the Signatories that the Commission select one Alternative in its entirety as part of this Settlement Agreement.

3.2 Staff supports both Alternatives A and B equally, and Staff agrees to support both Alternatives equally during any subsequent hearing or other Commission proceeding involving this Agreement. Southwest Gas supports the inclusion of the two Alternatives in this Agreement, but Southwest Gas shall be permitted to express its preference for either Alternative A or B during any subsequent hearing or other Commission proceeding involving this Agreement. The remaining Signatories will support at least one Alternative (either Alternative A or B), and they shall not be precluded from expressing their respective positions on the Alternatives set forth in this Agreement during any subsequent hearing or other Commission proceeding involving this Agreement.

A. Alternative A.

3.3 Alternative A consists of a partial revenue decoupling mechanism, a monthly weather adjustor consistent with the Southwest Gas proposal, an overall revenue increase of $54,927,101, a return on common equity capital of 9.75 percent, and a FVROR of 7.02 percent on FVRB (using Staff's fair value methodology and valuation).

3.4 Should the Commission select Alternative A, the Company will implement a partial revenue decoupling mechanism comprised of two components, a Lost Fixed Cost Recovery ("LFCR") component and a weather component. The partial revenue decoupling mechanism permits Southwest Gas to recover lost base revenues attributable to achievement of the Commission's required annual energy savings and to adjust customer bills each month when actual weather during the billing cycle differs from the average weather used in the calculation of rates.

3.5 The LFCR component permits the Company to recover, through a per unit surcharge, the total amount of the anticipated lost-base revenues, assuming it achieves 100 percent of the Commission's required annual energy savings. This amount will be trued-up to actual lost base revenue due to energy efficiency during an annual reconciliation process each April.

3.6 If the Company does not meet 100 percent of the Commission's required annual energy savings, the difference between the 100 percent it was allowed to collect and the actual lost revenue would be refunded to customers during the next annual reconciliation process.

3.7 If the Company exceeds its energy efficiency goals in any reconciliation period, the Company will only be allowed to recover 100 percent of the upcoming year lost base revenues. However, the Company will be permitted to recover, through the surcharge, in the following year the difference between the 100 percent collected from customers and the actual amount of the lost-base revenues associated with attaining energy savings greater than 100 percent of the year's goal, as limited by the Commission's required annual energy savings.

3.8 The initial LFCR surcharge will be set at $0.00213 per therm, beginning when rates under this Agreement become effective. This surcharge amount is based on the Commission's 2011 energy efficiency savings goal.

3.9 Southwest Gas shall make a filing annually, starting April 2013, to permit the Commission and all Parties to this Docket an opportunity to review the performance of the LFCR mechanism and to allow the Company an opportunity to reset the surcharge to recover the lost-base revenues attributable to its achievement of the Commission's required annual energy savings. Under or over collections should be trued up as part of the surcharge reset.

3.10 The weather-related component will be incorporated through a monthly true-up to winter (November through April) bills. When actual weather during the billing cycle differs from the average weather used in the calculation of rates there will be either an upward or downward adjustment to the customers' bill. In the event of an extreme cold weather event, customers will receive an immediate real-time benefit as there will be a downward adjustment to their bill.

Special Terms and Conditions for Alternative A

3.11 Staff will perform an annual review to determine compliance with the Commission's required annual energy savings and the Company agrees to pay up to $50,000 for an independent consultant selected by Staff for this review.

3.12 No Signatory will petition, nor join in a petition, to suspend, terminate, or modify the LFCR mechanism prior to the Company's next general rate case, unless for two consecutive years the results of the annual review process conclude the Company did not comply with the Commission's required annual energy savings. Paragraph 3.12 applies to the LFCR mechanism only.

3.13 Prior to the granting of any request to suspend, terminate, or modify the LFCR mechanism, a hearing will be conducted to permit the Signatories due process and an opportunity to be heard prior to any suspension, termination, or modification of the decoupling mechanism.

3.14 Southwest Gas will not be subject to a rate case application moratorium under Alternative A.

3.15 Southwest Gas will submit a proposed customer outreach/education plan to Staff for review and approval, with service to the Parties to this Docket. The plan shall outline how the Company intends to explain decoupling to customers.

3.16 Alternative A in its entirety, as described herein, consisting of a partial revenue decoupling mechanism, a revenue increase of $54,927,101, a return on common equity of 9.75 percent, a FVROR of 7.02 percent, as well as the special terms and conditions stated herein, is a carefully negotiated, integrated package representing compromises in the positions of the Signatories that results in a package that is just, reasonable, and in the public interest.

B. Alternative B.

3.17 Alternative B consists of a full revenue decoupling mechanism, a monthly weather adjustor consistent with the Southwest Gas proposal, an overall revenue increase of $52,607,414, a return on common equity capital of 9.50 percent, and a fair value rate of return of 6.92 percent on FVRB (using Staff's fair value methodology and valuation).

3.18 Should the Commission select Alternative B, the Company will implement a full revenue decoupling mechanism whereby rates will adjust to reflect any differences between authorized revenues per customer and actual revenues per customer – as proposed by the Company in its Application. This full revenue decoupling mechanism shall also include a monthly weather component and an annual non-weather component.

3.19 The weather-related component will be incorporated through a monthly true-up to winter (November through April) bills. When actual weather during the billing cycle differs from the average weather used in the calculation of rates there will be either an upward or downward adjustment to the customers' bill. In the event of an extreme cold weather event, customers will receive an immediate real-time benefit as there will be a downward adjustment to their bill.

3.20 There will also be an annual true-up reflecting the difference between the non-gas revenues authorized by the Commission and the actual non-gas revenues experienced by Southwest Gas. The phrase "revenues authorized by the Commission" is defined as the Commission authorized monthly revenue per customer multiplied by the total number of customers billed for service during the month. "Experienced revenue" is defined as the billed revenue for the month. At the end of each year, a per-therm rate adjustment will be computed by dividing the balance in the deferred account by the previous 12 months sales volume. The resulting rate will remain in effect for a 12-month period to refund or collect the deferred account balance.

Special Terms and Conditions for Alternative B

3.21 Southwest Gas shall file quarterly reports each April, July, October and January with the Commission on the performance of the decoupling mechanism. The first quarterly report will be filed no later than April 30, 2012.

3.22 The quarterly reports will address at a minimum: (i) monthly bill impacts for the Residential and Non-residential customer sectors, based on average sector therm usage, with comparisons of pre- and post-decoupling bills over two years, with a year-to-year comparison going forward; and (ii) monthly bill impacts by individual tariff, based on average tariff therm usage, with comparisons of pre- and post-decoupling bills over two years, with a year-to-year comparison going forward.

3.23 Commencing April 2013, Southwest Gas will file annual reports, each April, to permit the Commission and all Parties to this Docket an opportunity to review the performance of the decoupling mechanism. The annual filing shall include, but not be limited to: (1) listing of customer complaints resulting from or associated with revenue decoupling; (2) a showing that disincentives to energy efficiency have been removed by December 31, 2012; (3) compliance with the Commission's required annual energy savings and as contemplated in Section V.C. of this Agreement; (4) an analysis of usage differences between new and existing customers; (5) a comparison of the differences between new and existing customer usage per customer ("UPC"); (6) an analysis of overall customer usage, UPC, and customer growth per class on a pre- and post-decoupling basis; (7) an analysis of customer migration to tariffs not subject to decoupling or converting to non-gas energy usage; and (8) an analysis of Company activities in supporting new customer growth including the encouragement of new and economic uses of natural gas. These items are types of information that should provide meaningful information regarding the full revenue decoupling mechanism. The presence or absence of information responsive to any one of these items shall not, in and of itself, be indicative of whether to continue, suspend, terminate or modify the full revenue decoupling mechanism.

3.24 The Company's annual filing shall be the subject of an Open Meeting for the Commissioners to deliberate the performance of the full revenue decoupling mechanism. If the Commission determines that good cause exists to suspend, terminate, or modify the full revenue decoupling mechanism, then the matter shall be set for hearing to permit the

Parties to this Docket due process and an opportunity to be heard prior to any suspension, termination, or modification of the decoupling mechanism. In the event the Commission decides to suspend or terminate the full revenue decoupling mechanism prior to the Company's next general rate case, the moratorium for filing general rate case applications shall terminate. If the Commission decides to modify the full revenue decoupling mechanism, the Commission shall also determine if the modification is material enough that the moratorium for the filing a general rate application should be eliminated.

3.25 With the implementation of the full revenue decoupling mechanism, Southwest Gas will be subject to an annual earnings test whereby the Company will be prohibited from recovering any decoupling deferral amounts, to the extent that recovery would increase earnings such that the Company would be earning more than its authorized return on common equity.

3.26 Commencing April 2013, Southwest Gas shall include in its annual report, the results of its annual earnings test in a format consistent with the report attached hereto as Exhibit A.

3.27 The data points and assumptions to be utilized in the earnings test report will include the following:

- Reporting period shall consist of the 12 months ending December 31;
- FVRB held constant at $1,452,933,391;
- FVROR held constant at 6.92 percent, and all related cost of capital components held constant, including capital structure (52.30 percent equity and 47.70 percent debt), cost of debt (8.34 percent), cost of equity (9.50 percent), and return on fair value increment (1.25 percent);
- Experienced non-gas revenue for the reporting period;
- Recorded operating expenses for the reporting period, adjusted for certain ratemaking adjustments. The ratemaking adjustments will consist of recorded dollars less the Staff-specified disallowance percentage for the following Staff adjustments:

- C-3, Management Incentive Program ("MIP") expense will be limited to fifty percent of the recorded and allocated cost, however Staff may make a further adjustment if Staff believes the MIP expense has increased unreasonably;

- C-4, the cost of all stock-based compensation (other than MIP) shall be excluded;

- C-5, all Supplemental Executive Retirement Expense charged or allocated to Arizona operation shall be excluded. (Arizona);

- C-6, forty percent of American Gas Association dues shall be excluded;

- C-7, all losses related to the sale of employee homes for relocation shall be excluded;

- C-9, all Gas Heat Pump Development Expenses shall be excluded;

- C-11, fifty percent (50%) of all Directors' and Officers' Liability Insurance expense shall be excluded;

- C-13, leased aircraft expense shall be limited to the lesser of (1) the actual recorded amount or (2) Staff's proposed allowance of $472,000;

- Staff's Schedule B adjustments and Staff's Schedule C adjustments C-1 (Completed Construction Not Classified Correction), C-2 (Yuma Manors Pipe Replacement), and C-10 (Interest Synchronization) will remain constant because rate base and FVROR remain constant for the purposes of the earnings test;

- Staff's Schedule C adjustment C-8 (Rent Charged to Affiliate IntelliChoice Energy LLC) and C-14 (COYL Leak Detection Survey) will be recorded in Southwest Gas' operating expenses going forward, so no further adjustment will be necessary for the earnings test;

- Staff's Schedule C adjustments C-12 Reserve for Self Insurance, is a normalizing adjustment and Southwest Gas will use its recorded amounts for purposes of the earnings test;

- For purposes of calculating income taxes, interest expense will be held constant since the FVROR will be held constant;

- Any surcharge revenues and expenses will not be included in the earnings test.

3.28 Staff will perform an annual review to analyze the information submitted by Southwest Gas and the Company agrees to pay up to $75,000 for an independent consultant selected by Staff for this review.

3.29 Any surcharge through the decoupling mechanism that will result in an annual increase in non-gas revenue of greater than 5 percent from the test-year non-gas base revenue per customer will be capped at 5 percent. Southwest Gas will carry the deferral account balance forward for recovery in the next year and subsequent years with no carrying charges. There will be no cap on annual surcharge decreases.

3.30 Southwest Gas will not file a general rate case application prior to April 30, 2016 with a test year no earlier than November 30, 2015 and none of the Signatories will request any change, nor join in a request for any change, to the Company's base rates that would take effect prior to May 1, 2017. This moratorium is not intended to preclude the Company from filing other interim applications as may be necessary or required, including without limitation, proposals to reset its demand side management surcharge mechanism, or requests to establish deferred accounts for costs incurred by the Company to comply with new or revised pipeline safety requirements, or other unfunded state or federal mandates.

3.31 Southwest Gas will submit a proposed customer outreach/education plan to Staff for review and approval, with service to the parties of record. The plan shall outline how the Company intends to explain decoupling to customers.

3.32 Alternative B in its entirety - consisting of a full revenue decoupling mechanism, a revenue increase of $52,607,414, a return on common equity capital of 9.50 percent, a fair value rate of return of 6.92 percent, as well as the special terms and conditions stated herein - is a carefully negotiated package representing compromises in the positions of the Signatories that results in a package that is just, reasonable, and in the public interest.

C. Rates and Charges are Just, Reasonable, and in the Public Interest.

3.33 The Signatories agree that the overall rate increases associated with Alternatives A and B are just, reasonable, and in the public interest based upon the unique circumstances of each alternative, but only if either Alternative A or B is implemented in its entirety, as intended by the Signatories herein. The Signatories further agree that if any of the components of Alternative A or B are changed, including any other remaining components of this Agreement, then the rates and charges associated with the changed alternative may not be considered just and reasonable by the Signatories.

3.34 A comparison of the various revenue requirement increases and returns on equity ("ROE") proposed by certain Signatories, as compared to those contained in each of the settlement alternatives, is set forth in the following table:

	Company Direct	Staff Direct	Settlement Alternative A	Settlement Alternative B
Proposed Revenue Increases	**$73.2M**	**$54.9M**	**$54.9M**	**$52.6M**
Requested ROE	**11.00%**	**9.75%**	**9.75%**	**9.50%**
Overall Average Rate Increase %	**9.26%**	**6.95%**	**6.95%**	**6.66%**

IV. LOW INCOME PROGRAMS

4.1 Southwest Gas will enhance and increase the funding level of the Low Income Energy Conservation ("LIEC") weatherization program by committing to make non-ratepayer funded contributions to the LIEC weatherization program each year for the next 5 years. This commitment shall result in a total contribution of at least $1 million.

4.2 The demand-side management adjustor rate for the low-income residential rate schedule(s) will not be increased above the rate currently collected, which is $0.00200 per therm.

4.3 The Customer Owned Yard Line cost recovery mechanism ("CCRM") will consist of a per therm charge, and the CCRM will not apply to the low-income rate schedule(s).

4.4 The proposed increase to the low-income residential rate schedule(s) shall be mitigated by increasing the Low-Income Rate Assistance discount to 30 percent, from the current 20 percent for the first 150 therms in the winter months (November through April). This will result in an average monthly bill increase of either $0.70 (Alternative A) or $0.59 (Alternative B) depending upon the alternative selected by the Commission.

4.5 Southwest Gas will meet with the Parties to this Docket within 45 days of the effective date of any order approving this Agreement to develop a plan to enhance customer education and outreach for its LIEC weatherization programs.

V. AGREEMENTS REGARDING OTHER SPECIFIC ISSUES

5.1 Upon the Commission's selection of either Alternative A or B in each alternative's entirety, the Signatories agree to the following remaining issues regarding the Company's general rate application. The Commission's selection of either Alternative A or B in their entirety does not materially impact the compromises reached by the Signatories on these remaining issues.

A. Cost of Capital.

5.2 The Signatories agree that a capital structure comprised of 47.70 percent long-term debt and 52.30 percent common equity is appropriate and shall be adopted for ratemaking purposes, and for the purposes of this Agreement.

5.3 The Signatories agree that an embedded cost of debt of 8.34 percent is appropriate and shall be adopted for ratemaking purposes, and for the purposes of this Agreement.

B. Rate Base.

5.4 For ratemaking purposes and for the purposes of this Agreement, the Signatories agree that the Company's jurisdictional OCRB for the test year ending June 30, 2010 is $1,070,115,558.

5.5 For ratemaking purposes and for purposes of this Agreement, the Signatories agree that the Company's jurisdictional Reconstruction Cost New Depreciated ("RCND") rate base for the test year ending June 30, 2010 is $1,835,749,225.

5.6 For ratemaking purposes and for purposes of this Agreement, the Signatories agree that the fair value of Southwest Gas' jurisdictional rate base for the test year ending June 30, 2010 is $1,452,932,391.

C. Energy Efficiency and Renewable Energy Resource Technology.

5.7 Southwest Gas included in its Application a request for approval of its EE and RET Plan pursuant to A.A.C. R14-2-2501 *et seq.*

5.8 Southwest Gas agrees to provide supplemental EE information to support a modified EE and RET Plan for EE measures that are cost-effective at the measure level as part of this Agreement. This modified EE and RET Plan shall result in an incremental improvement of EE that exceeds the current Southwest Gas approved portfolio budget of $4.4 million, and that results in customer annual energy savings of at least 1,250,000 therms within nine months of Commission approval of the modified Plan.

5.9 Staff will provide recommendations on as many measures of the modified EE and RET Plan as possible in a report filed prior to the Open Meeting where the Commission intends to vote on the Recommended Opinion and Order approving this Agreement. In an effort to achieve timely approval of the modified EE and RET Plan, the Signatories urge the Commission to vote on the measures in Staff's report on the date the Commission votes on this Agreement.

5.10 The Signatories acknowledge that the energy savings proposed in the modified EE and RET Plan may not be sufficient to meet the 2011 energy savings goals set forth in A.A.C. R14-2-2501 *et seq*. In order to increase the customer annual energy savings that are being agreed to as part of this Agreement, Southwest Gas shall file in a new docket within 60 days of filing this Agreement a new and revised EE and RET Implementation Plan pursuant to A.A.C. R14-2-2501 *et seq* setting forth a plan for how it proposes to comply with the energy savings goals set forth therein. The new and revised EE and RET Implementation Plan will be incremental to the modified EE and RET Plan measures that are being committed to by Southwest Gas as part of this Agreement.

5.11 Southwest Gas shall achieve customer annual energy savings equivalent to the 2011 requirement of the gas energy savings goals within 12 months of Commission approval of the new and revised EE and RET Implementation Plan. Staff agrees to make its best efforts to review the Company's new and revised EE and RET Implementation Plan and file recommendations for Commission approval on a schedule that contributes to timely implementation of the energy savings programs that are necessary to achieve the 2011 energy savings target. In 2012 and beyond, Southwest Gas will comply with the cumulative annual energy savings requirements set forth in A.A.C. R14-2-2501 *et seq*. At least 75 percent of the cumulative annual energy savings shall be achieved through EE programs. In this regard, Southwest Gas agrees to file its implementation plans consistent with the requirements of A.A.C. R14-2-2501 *et seq*, on schedule, at the energy savings targets identified therein, and commits to work with SWEEP and Staff to avoid the need to file a request for waiver during any plan year from 2011-2015 in lieu of submitting an implementation plan designed to achieve the energy savings targets set forth in A.A.C. R14-2-2504. Staff agrees to make their best efforts to review the Company's implementation plans and file recommendations for Commission votes on a schedule that contributes to timely implementation of the energy savings programs that are necessary to achieve the energy savings targets set forth in A.A.C. R14-2-2501 *et seq*.

D. Customer Owned Yard Line Replacement Program.

5.13 Southwest Gas shall be permitted to establish a program for replacing customer owned yard lines ("COYL") consistent with the terms of this Agreement.

5.14 Southwest Gas will purchase four (4) Remote Methane Leak Detection ("RMLD") units, field test and validate the effectiveness of the RMLD equipment, and work with Staff to obtain approval for the use of the RMLD equipment. Following approval of the RMLD equipment, Southwest Gas will begin to leak survey COYLs utilizing the RMLD equipment and other conventional equipment as necessary. Prior to leak surveying the COYLs, Southwest Gas will notify customers with COYLs and obtain permission, where necessary, to perform leak surveying of the COYL. The Company estimates that it has approximately 102,000 COYLs in its service territory. Southwest Gas commits to leak survey approximately one-third of the COYLs every year.

5.15 So as to not unduly financially burden its customers, Southwest Gas will replace all COYLs that are found to be leaking, either as a result of the COYL leak survey process or from a leak survey following an odor call complaint. Southwest Gas will be allowed to recover the capital investment associated with the COYL replacement program through a COYL cost recovery mechanism ("CCRM") that will be reset annually. The CCRM shall not result in a surcharge amount greater than $0.01 per therm in any single year.

5.16 The CCRM is based solely on actual costs and costs eligible for recovery, which are depreciation and pre-tax return. The original cost pre-tax rate of return authorized by the Commission is applied to gross plant, less accumulated depreciation and less all credit-balance Accumulated Deferred Income Taxes related to the plant cost incurred under this program. Depreciation expense includes actual recorded depreciation expense at the currently-authorized depreciation rate of 5.30 percent per year for services, applied on a monthly basis to COYL replacement plant as of the previous month-end, plus amortization of deferred depreciation expenses.

5.17 Recovery of costs through a CCRM surcharge terminates upon inclusion of the COYL replacement cost in rate base. A surcharge schedule, showing a detailed calculation of the COYL revenue requirement and the surcharge will be included in the Company's annual application for cost recovery. A sample calculation illustrating the mechanics of the CCRM is attached hereto as Exhibit B.

5.18 Upon completion of the first six months of leak surveying, Southwest Gas will file a report with the Commission, with service to the Parties to this Docket, informing them of its findings and any recommendations regarding the program. Southwest Gas will then report on its findings and recommendations on an annual basis thereafter. The annual report shall include the following: (1) location by address of each leak detected; (2) indication of how the leak was discovered, i.e. leak detection or odor complaint; (3) itemization of the cost and the plant installed at each location; (4) the surcharge calculation; and (5) a schedule describing the survey rotation provided to Staff. Southwest Gas will file its annual report and CCRM application in February of each year with data from the previous calendar year, with the initial filing to be made in February

2013. Staff will review the filing and within 45 days make a recommendation to the Commission regarding the report and the request to reset the surcharge amount.

5.19 The Company shall make modifications to its operations and maintenance manuals as may be required by the Commission's Office of Pipeline Safety for the Company's COYL replacement program.

E. Expense Reduction Plan.

5.20 The Company will identify cost reduction initiatives to reduce its expenses on an annual basis by an average of $2.5 million per year beginning in 2012. Southwest Gas agrees the $2.5 million average annual expense reduction commitment will continue through the end of the test year in the Company's next general rate case. The $2.5 million annual expense reduction by Southwest Gas represents an average annual reduction - in some years, it may exceed $2.5 million.

F. Customer Communication Improvements.

5.21 The Company shall file a report in this docket every six months, beginning March 31, 2012, detailing developments in its efforts to improve communications with customers. The Company will include in its initial report to the Commission a section on whether the Company can use texting to communicate with its customers, or if it cannot, provide an explanation as to why not.

G. Gas Procurement.

5.22 The Company agrees that it will create a new section in its Annual Gas Procurement Plan to document the use of financial instruments – including providing an explanation.

5.23 The Company agrees that it will provide an explanation in any future purchased gas adjustor ("PGA") reports when it begins to recover compressed natural gas costs through the PGA mechanism, including an indication of the reasons for such service, the expected length of time such service will be necessary, and the estimated cost and volume of such service.

H. Purchased Gas Adjustor.

5.24 Southwest Gas will file, within 60 days of the effective date of an order approving this Agreement, a document defining all current line items in the monthly PGA report. The Company will include in its cover letters for future monthly PGA reports an explanation of any additions, deletions, or changes in the line item terms used in the report.

I. Yuma Manors.

5.25 Southwest Gas will not be permitted to recover in base rates the remaining $225,445 associated with the Yuma Manors pipe replacement project that occurred in 2006 and that was the subject of Decision No.70665.

J. 20 Year Plan To Replace Early Vintage Plastic Pipe.

5.26 Southwest Gas shall continue with its 20-year plan for replacing EVPP, and provide documentation of progress and money spent in future rate case proceedings.

5.27 Southwest Gas shall not establish a deferral account in conjunction with the replacement of EVPP.

5.28 Southwest Gas shall not modify or discontinue the write-off requirements associated with Aldyl HD pipe.

K. Development of Gas Heat Pump Technology.

5.29 The Signatories agree that for ratemaking purposes all gas heat pump technology development costs shall be removed from operating expenses.

5.30 Southwest Gas agrees that no new gas heat pump projects shall be funded through the Commission-approved research and development surcharge.

5.31 Southwest Gas will prepare an accounting for all gas heat pump technology development costs that have been funded by Arizona ratepayers through base rates and the research and development surcharge through the date of the Commission's final order in this case. Southwest Gas will track the Arizona ratepayer funding for gas heat pump technology development as a potential regulatory liability, to be returned to ratepayers, only to the extent commercial development occurs and revenues and royalties are received by

Southwest Gas and profits and royalties are received by any other entities that are affiliated with Southwest Gas including but not limited to IntelliChoice Energy LLC.

5.32 Southwest Gas will prepare a plan to reimburse Arizona ratepayers for their proportionate level of funding of gas heat pump technology development costs. This plan will include a methodology for how the benefits of any commercialization revenues and royalties associated with the gas engine driven air conditioning units are to be shared with Southwest Gas' Arizona ratepayers to ensure that customers receive credit for any investment that contributed to the development of this technology. Southwest Gas will file its above-referenced plan and related information with the Commission, with service to the Parties to this Docket within 90 days of the effective date of an order approving this Agreement. Within 120 days of Southwest Gas' submittal of this plan and related information, Staff will submit its recommendation to the Commission for its consideration.

L. Incremental Contribution Method.

5.33 In compliance with Decision No. 70665, Southwest Gas provided, in its application, an explanation, including sample calculations and documentation, of how it has been implementing the Incremental Contribution Method ("ICM") and Rule 6 of its Arizona Gas Tariff. The Signatories agree to the Company's continued use of its ICM and ICM model.

5.34 Within 30 days of the effective date of an order approving this Agreement, Southwest Gas will submit to the Commission a revised ICM model that prevents the Company from collecting contributions in aid of construction ("CIAC") that result in an expected ROE, as generated through the ICM model, that is more than 50 basis points above the authorized return on common equity. Within 90 days of the Company's filing of the revised ICM model, Staff will submit a recommendation to the Commission for the Commission's consideration.

M. Depreciation Study.

5.35 Southwest Gas will file a comprehensive depreciation study as part of its next general rate case application that addresses depreciation and amortization rates for all of Southwest's Arizona Direct and System Allocable depreciable and amortizable plant accounts. Southwest Gas shall not omit any such accounts from such studies.

N. Rate Design and Revenue Allocation.

5.36 The Signatories agree to a base rate revenue allocation resulting in an equal percentage increase among all customer classes, with the exception of the low income rate schedules.

5.37 A comparison of the overall average rate increase, the average residential and low-income rate increase, and the average monthly bill impact for residential and low-income customers associated with certain Signatories' filed positions and the results of Alternatives A and B of this Agreement is contained in the following table (which includes gas costs but not surcharges):

	Company Direct	Staff Direct	Settlement Alternative A	Settlement Alternative B
Overall Average Rate Increase (%)	9.26%	6.95%	6.95%	6.66%
Average Rate Increase (%) - RESIDENTIAL	13.55%	10.31%	8.11%	7.77%
Average Monthly Bill Impact – RESIDENTIAL	$5.81	$4.42	$3.48	$3.33
Average Rate Increase LOW INCOME	16.08%	11.61%	2.16%	1.81%
Average Monthly Bill Impact - LOW INCOME	$5.20	$4.04	$0.70	$0.59

5.38 A comparison of the proposed increases associated with Alternative A for each rate schedule is contained in Exhibit C and a comparison of the proposed increases associated with Alternative B for each rate schedule is contained in Exhibit D.

5.39 As part of Southwest Gas' next general rate application, Southwest Gas will include as one of its rate design proposals an inclining block rate design.

O. Miscellaneous Tariff Changes.

5.40 The miscellaneous housekeeping and other proposed changes to its Arizona Gas Tariff that were proposed in the Company's Application shall be accepted, except as otherwise specifically addressed in this Agreement.

5.41 Southwest Gas agrees that it shall modify its Arizona Gas Tariff consistent with Staff witness Bryan Frye's testimony supporting metering configurations where a sub-meter is installed by Southwest Gas downstream of the primary meter.

VI. FORCE MAJEURE PROVISION

6.1 Notwithstanding anything contained herein to the contrary, Southwest Gas shall not be prevented from requesting a change to its base rates in the event of conditions or circumstances that constitute an emergency. For the purposes of this Agreement, the term "emergency" is limited to an extraordinary event that is beyond Southwest Gas' control and that, in the Commission's judgment, requires base rate relief in order to protect the public interest. This provision is not intended to preclude any Settlement Party from opposing an application for rate relief filed by Southwest Gas pursuant to this paragraph.

VII. COMMISSION EVALUATION OF PROPOSED SETTLEMENT

7.1 The Signatories agree that all currently filed testimony and exhibits shall be offered into the Commission's record as evidence. The Signatories waive the filing and submission of rebuttal testimony and exhibits from Southwest Gas, the filing and submission of surrebuttal testimony and exhibits from Staff and Intervenors, and the filing and submission of rejoinder testimony and exhibits by Southwest Gas.

7.2 The Signatories recognize that Staff does not have the power to bind the Commission. For purposes of proposing a settlement agreement, Staff acts in the same manner as any party to a Commission proceeding.

7.3 This Agreement shall serve as a procedural device by which the Signatories will submit their proposed settlement of Southwest Gas' pending rate case, Docket No. G-01551A-

10-0458 to the Commission.

7.4 The Signatories recognize that the Commission will independently consider and evaluate the terms of this Agreement. If the Commission issues an order adopting all material terms of this Agreement, such action shall constitute Commission approval of the Agreement. Thereafter, the Signatories shall abide by the terms as approved by the Commission.

7.5 The Signatories agree that each Signatory, with the exception of Staff, retains the right to express its respective positions on Alternatives A and/or B during any hearings held by the Commission on this Agreement and at any subsequent Commission proceeding where the Commission votes on this Agreement. However, the selection of either Alternative A or B in each alternative's entirety by the Commission at Open Meeting does not relieve any of the Signatories from their respective obligations to support and defend this Agreement from that point forward.

7.6 The Signatories agree that if the Commission, in selecting between Alternative A and Alternative B, selects the alternative in its entirety that was not supported by a Signatory, such Signatory will nonetheless continue to be bound by the terms of this Agreement and the Commission order. With respect to this paragraph only, each of the Signatories waives its right to request a rehearing under Arizona Revised Statutes ("A.R.S.") § 40-253 or an amendment or modification under A.R.S. § 40-252 solely on the basis that the Commission selected an Alternative (either Alternative A or B) that was not supported by such Signatory.

7.7 If the Commission fails to issue an order adopting all material terms of this Agreement, or makes material modifications to either Alternative A or B as part of the acceptance, or imposes any additional material conditions on approval of this Agreement any or all of the Signatories may withdraw from this Agreement, and such Signatory or Signatories may pursue without prejudice their respective remedies at law, subject to Paragraph 7.6. For the purposes of this Agreement, whether a term is material (except for Alternative A or B) shall be left to the discretion of the Signatory choosing to withdraw from the Agreement. If a Signatory withdraws from the Agreement pursuant to this paragraph and files an application for rehearing (except as set forth in Paragraph 7.6), the other Signatories, except for Staff, shall support the application for rehearing by filing a document to that effect with the Commission that supports approval of the Agreement in its entirety. Staff shall not be obligated to file any document or take any position regarding the withdrawing Signatory's application for rehearing.

7.8 Within ten days after the Commission issues an order pertaining to this Agreement, if not sooner, Southwest Gas shall file compliance schedules for Staff's review.

VIII. MISCELLANEOUS PROVISIONS

8.1 This Agreement represents the Signatories' mutual desire to compromise and settle disputed issues in a manner consistent with the public interest. The terms and provisions of this Agreement apply solely to and are binding only in the context of the purposes and results of this Agreement.

8.2 This case has attracted a number of participants with widely diverse interests. To achieve consensus for settlement, many participants are accepting positions that, in any other circumstances, they would be unwilling to accept. They are doing so because this Agreement, as a whole, with its various provisions for settling the issues presented by this case, is consistent with their long-term interests and with the broad public interest. The acceptance by any Signatory of a specific element of this Agreement shall not be considered as precedent for acceptance of that element in any other context.

8.3 Nothing in this Agreement shall be construed as an admission by any Signatory as to the reasonableness or unreasonableness or lawfulness or unlawfulness of any position previously taken by any other Signatory in this proceeding.

8.4 No Signatory is bound by any position asserted in negotiations, except as expressly stated in this Agreement. No Signatory shall offer evidence of conduct or statements made in the course of negotiating this Agreement before this Commission, any other regulatory agency, or any court.

8.5 Neither this Agreement nor any of the positions taken in this Agreement by any of the Signatories may be referred to, cited, or relied upon as precedent in any proceeding before the Commission, any other regulatory agency, or any court for any purpose except in furtherance of securing the approval and enforcement of this Agreement.

8.6 To the extent any provision of this Agreement is inconsistent with any existing Commission order, rule, or regulation, this Agreement shall control.

8.7 Each of the terms of this Agreement is in consideration of all other terms of this Agreement. Accordingly, the terms are not severable.

8.8 The Signatories shall make reasonable and good faith efforts necessary to obtain a Commission order approving this Agreement. The Signatories shall support and defend this Agreement before the Commission. Subject to paragraph 7.5, if the Commission adopts an order approving all material terms of the Agreement, the Signatories will support and defend the Commission's order before any court or regulatory agency in which it may be at issue.

8.9 This Agreement may be executed in one or more counterparts and each counterpart shall have the same force and effect as an original document and as if all the Signatories had signed the same document. Any signature page of this Agreement may be detached from any counterpart of this Agreement without impairing the legal effect of any signatures thereon, and may be attached to another counterpart of the Agreement identical in form hereto but having attached to it one or more signature page(s).

8.10 Nothing contained in this Agreement is intended to interfere with the Commission's authority to exercise any regulatory authority by the issuance of orders, rules or regulations.

DATED this 15th day of July 2011.

By: ______________________

Printed Name: Gary Yaquinto

Company: Arizona Investment Council

Title: President

DATED this 15th day of July 2011.

By: ______________________

Printed Name: Justin Lee Brown

Company: Southwest Gas Corporation

Title: Assistant General Counsel

DATED this 15th day of July 2011.

By: ______________________

Printed Name: STEVEN OLEA

Company: Utilities Division - Arizona Corp. Comm.

Title: DIRECTOR

DATED this 15th day of July 2011.

By: Jeffrey A Schlegel

Printed Name: Jeffrey A. Schlegel

Company: Southwest Energy Efficiency Project (SWEEP)

Title: Arizona Representative of SWEEP

DATED this 15th day of July 2011.

By: ______________________

Printed Name: LAURA E. SANCHEZ

Company: NRDC

Title: STAFF ATTORNEY

DATED this 15th day of July 2011.

By: ______________________

Printed Name: CYNTHIA ZWICK

Company: ______________________

Title: ______________________

EXHIBIT A-15

ORIGINAL

RECEIVED

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AZ CORP COMMISSION DOCKET CONTROL

Arizona Corporation Commission
DOCKETED
JUL 29 2011
DOCKETED BY

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
GARY PIERCE - Chairman
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF SOUTHWEST GAS CORPORATION FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTIES THROUGHOUT ARIZONA.	DOCKET NO. G-01551A-10-0458 **STAFF'S NOTICE OF FILING EXHIBITS TO THE PROPOSED SETTLEMENT AGREEMENT**

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files the exhibits to the proposed Settlement Agreement that was docketed July 15, 2011.

RESPECTFULLY SUBMITTED this 29th day of July, 2011.

Robin R. Mitchell, Staff Counsel
Wesley C. Van Cleve, Staff Counsel
Ayesha K. Vohra, Staff Counsel
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402

Original and thirteen (13) copies of the foregoing were filed this 29th day of July, 2011, with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copies of the foregoing were mailed and/or emailed this 29th day of July, 2011, to:

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Ashley Hodge

EXHIBIT A

(EARNINGS TEST CALCULATION METHOD)

Earnings Test Calculation Method

Line No.	DESCRIPTION
1.	Fair Value Rate Base = $1,452,933,391
2.	Fair Value Rate of Return = 6.92%
3.	Operating Income Required = Ln 1 * Ln 2
4.	Net Operating Income Available = Experienced non-gas revenue less recorded operating expenses, adjusted for certain ratemaking adjustments as identified in Section 3.27 of the settlement agreement
5.	Earnings Deficit/(Excess) = Ln 3 – Ln 4
6.	Gross Revenue Conversion Factor = 1.6579
7.	Revenue Deficit/(Excess) = Ln 5 * Ln 6

EXHIBIT B

(CUSTOMER OWNED YARD LINES RECOVERY MECHANISM CALCULATION METHOD)

Customer Owned Yard Line Surcharge Calculation Method

Line No.	DESCRIPTION
1.	Gross COYL Plant Installed
2.	Accumulated Depreciation
3.	Net COYL Plant = Line 1 minus Line 2
4.	Accumulated Deferred Income Tax on COYL Plant
5.	COYL Rate Base = Line 3 minus Line 4
6.	Return on COYL Rate Base = Approved Rate of Return times Line 5
7.	Income Tax Factor = 0.6579
8.	Income Taxes = Authorized Cost of Equity times Line 5 times Line 7
9.	Depreciation Expense
10.	Total Revenue Requirement = Line 6 plus Line 8 plus Line 9
11.	Therms sold previous year less Low Income therms
12.	Surcharge = Line 10 divided by Line 11

EXHIBIT C

(RATE SCHEDULES FOR ALTERNATIVE A)

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF REVENUES AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Schedule Number	Revenues: Present Rates	Revenues: Proposed Rates	Increase/(Decrease): Dollars	Increase/(Decrease): Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
1	Single-Family Residential Gas Service	G-5	$ 446,457,488	$ 482,672,768	$ 36,215,280	8.11%	1
2	Multi-Family Residential Gas Service	G-6	11,069,522	11,981,702	912,180	8.24%	2
3	Single-Family Low Income Residential Gas Service [1]	G-10	16,359,839	17,992,787	1,632,948	9.98%	3
4	Multi-Family Low Income Residential Gas Service [1]	G-11	1,179,663	1,290,200	110,537	9.37%	4
5	Special Residential Gas Service for Air Conditioning	G-15	117,376	120,994	3,618	3.08%	5
6	Total Residential Gas Service		$ 475,183,888	$ 514,058,451	$ 38,874,563	8.18%	6
7	Master Metered Mobile Home Park Gas Service	G-20	2,156,004	2,277,055	121,051	5.61%	7
	General Gas Service						
8	Small	G-25(S)	10,709,328	11,817,447	1,108,119	10.35%	8
9	Medium	G-25(M)	49,894,508	53,057,939	3,163,431	6.34%	9
10	Large-1	G-25(L1)	116,144,518	122,287,798	6,143,280	5.29%	10
11	Large-2	G-25(L2)	34,738,344	36,315,079	1,576,735	4.54%	11
12	Transportation Eligible	G-23(TE)	47,729,238	50,768,247	3,039,009	6.37%	12
13	Air Conditioning Gas Service	G-40	337,269	348,782	11,513	3.41%	13
14	Street Lighting Gas Service	G-45	115,362	122,842	7,480	6.48%	14
	Compression on Customer's Premises						
15	Residential	G-55	42,004	43,029	1,025	2.44%	15
16	Small		96,122	99,079	2,957	3.08%	16
17	Large		1,700,447	1,816,930	116,483	6.85%	17
18	Total Compression on Customer's Premises Gas Service		$ 1,838,573	$ 1,959,038	$ 120,465	6.55%	18
19	Electric Generation Gas Service	G-60	3,858,577	4,276,548	417,971	10.83%	19
20	Small Essential Agriculture User Gas Service	G-75	2,603,837	2,705,727	101,890	3.91%	20
21	Natural Gas Engine Gas Service	G-80	5,375,250	5,615,427	240,177	4.47%	21
22	Total Gas Sales & Full Margin Transportation		$ 750,684,696	$ 805,610,380	54,925,684	7.32%	22
23	Optional Gas Service	G-30	24,522,491	24,522,491	0	0.00%	23
24	Special Contract Service	B-1	2,763,591	2,763,591	0	0.00%	24
25	Other Operating Revenue		12,096,356	12,096,356	0	0.00%	25
26	Total Arizona Revenue		$ 790,067,134	$ 844,992,818	$ 54,925,684	6.95%	26
	[1] Excluding low-income rate discount.						
	Low-Income Including Rate Discount						
27	Single-Family Low Income Residential Gas Service	G-10	$ 13,629,700	$ 13,917,719	$ 288,019	2.11%	27
28	Multi-Family Low Income Residential Gas Service	G-11	$ 1,006,940	$ 1,034,860	$ 27,920	2.77%	28

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF MARGIN AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Schedule Number	Margin: Present Rates	Margin: Proposed Rates	Increase/(Decrease): Dollars	Increase/(Decrease): Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
1	Single-Family Residential Gas Service	G-5	$ 260,896,069	$ 297,111,349	$ 36,215,280	13.88%	1
2	Multi-Family Residential Gas Service	G-6	6,914,441	7,826,621	912,180	13.19%	2
3	Single-Family Low Income Residential Gas Service	G-10	8,921,577	10,554,525	1,632,948	18.30%	3
4	Multi-Family Low Income Residential Gas Service	G-11	676,150	786,687	110,537	16.35%	4
5	Special Residential Gas Service for Air Conditioning	G-15	54,143	57,761	3,618	6.68%	5
6	Total Residential Gas Service		$ 277,462,380	$ 316,336,943	$ 38,874,563	14.01%	6
7	Master Metered Mobile Home Park Gas Service	G-20	863,947	984,998	121,051	14.01%	6
	General Gas Service						
8	Small	G-25(S)	7,908,814	9,016,933	1,108,119	14.01%	7
9	Medium	G-25(M)	22,579,171	25,742,602	3,163,431	14.01%	8
10	Large-1	G-25(L1)	43,845,416	49,988,696	6,143,280	14.01%	9
11	Large-2	G-25(L2)	11,254,459	12,831,194	1,576,735	14.01%	10
12	Transportation Eligible	G-25(TE)	21,689,599	24,728,608	3,039,009	14.01%	11
13	Air Conditioning Gas Service	G-40	82,169	93,682	11,513	14.01%	13
14	Street Lighting Gas Service	G-45	53,386	60,866	7,480	14.01%	14
	Compression on Customer's Premises	G-55					
15	Residential		17,094	18,119	1,025	6.00%	15
16	Small		24,227	27,184	2,957	12.21%	16
17	Large		818,366	934,849	116,483	14.23%	17
18	Total Compression on Customer's Premises Gas Service		$ 859,687	$ 980,152	$ 120,465	14.01%	18
19	Electric Generation Gas Service	G-60	2,982,640	3,400,611	417,971	14.01%	18
20	Small Essential Agriculture User Gas Service	G-75	727,284	829,174	101,890	14.01%	19
21	Natural Gas Engine Gas Service	G-80	1,713,984	1,954,161	240,177	14.01%	20
22	Total Sales and Full Margin Transportation		$ 392,022,936	$ 446,948,620	$ 54,925,684	14.01%	21
23	Optional Gas Service	G-30	4,024,536	4,024,536	0	0.00%	12
24	Special Contract Service	B-1	2,763,591.4	2,763,591	0	0.00%	22
25	Other Operating Revenue		12,096,355.6	12,096,356	0	0.00%	23
26	Total Arizona Revenue		$ 410,907,419	$ 465,833,103	$ 54,925,684	13.37%	24

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF GAS COSTS AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Schedule Number	Gas Cost Present Rates	Gas Cost Proposed Rates	Increase/(Decrease) Dollars	Increase/(Decrease) Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
1	Single-Family Residential Gas Service	G-5	$ 185,561,419	$ 185,561,419	$ -	0.00%	1
2	*Multi-Family Residential Gas Service*	G-6	4,155,081	4,155,081	-	0.00%	2
3	Single-Family Low Income Residential Gas Service	G-10	7,438,262	7,438,262	-	0.00%	3
4	Multi-Family Low Income Residential Gas Service	G-11	503,513	503,513	-	0.00%	4
5	Special Residential Gas Service for Air Conditioning	G-15	63,233	63,233	-	0.00%	5
6	Master Metered Mobile Home Park Gas Service	G-20	1,292,057	1,292,057	-	0.00%	6
	General Gas Service						
7	Small	G-25(S)	2,800,514	2,800,514	-	0.00%	7
8	Medium	G-25(M)	27,315,337	27,315,337	-	0.00%	8
9	Large-1	G-25(L1)	72,299,102	72,299,102	-	0.00%	9
10	Large-2	G-25(L2)	23,483,885	23,483,885		0.00%	10
11	Transportation Eligible	G-25(TE)	26,039,639	26,039,639	-	0.00%	11
12	Optional Gas Service	G-30	20,497,955	20,497,955	-	0.00%	12
13	Air-Conditioning Gas Service	G-40	255,100	255,100	-	0.00%	13
14	Street Lighting Gas Service	G-45	61,976	61,976	-	0.00%	14
	Gas Service for Compression on Customer's Premises	G-55					
15	Residential		24,910	24,910	-	0.00%	15
16	Small		71,895	71,895	-	0.00%	16
17	Large		882,081	882,081	-	0.00%	17
18	Electric Generation Gas Service	G-60	875,937	875,937	-	0.00%	18
19	Small Essential Agriculture User Gas Service	G-75	1,876,553	1,876,553	-	0.00%	19
20	Natural Gas Engine Gas Service	G-80	3,661,266	3,661,266	-	0.00%	20
21	Total Gas Sales		$ 379,159,715	$ 379,159,715	$ -	0.00%	21
22	Special Contract Service	B-1	-	-	-	0.00%	22
23	Other Operating Revenue		-	-	-	0.00%	23
24	Total Arizona Revenue		$ 379,159,715	$ 379,159,715	$ -	0.00%	24

SOUTHWEST GAS CORPORATION
ARIZONA
RATE SUMMARY AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

			Present Rates						Settlement Rates				
Line No.	Description (a)	Schedule (b)	Delivery Charge [1] (c)	Rate Adjustment [2] (d)	Gas Cost [2] (e)	Currently Effective Tariff Rate (f)	Description (g)	Schedule (h)	Delivery Charge (i)	Rate Adjustment [2] (j)	Gas Cost [2] (k)	Effective Tariff Rate (l)	Line No.
	Single-Family Residential Gas Service	G-5					Single-Family Residential Gas Service	G-5					
1	Basic Service Charge per Month		$ 10.70			$ 10.70	Basic Service Charge per Month		$ 10.70			$ 10.70	1
	Delivery Charge per Therm						Delivery Charge per Therm						
2	All Usage		$ 0.57070	$ (0.06400)	$ 0.70873	$ 1.21543	All Usage		$ 0.70902	$ (0.06400)	$ 0.70873	$ 1.35375	2
	Multi-Family Residential Gas Service	G-6					Multi-Family Residential Gas Service	G-6					
3	Basic Service Charge per Month		$ 9.70			$ 9.70	Basic Service Charge per Month		$ 9.70			$ 9.70	3
	Delivery Charge per Therm						Delivery Charge per Therm						
4	All Usage		$ 0.55343	$ (0.06400)	$ 0.70873	$ 1.19816	All Usage		$ 0.70902	$ (0.06400)	$ 0.70873	$ 1.35375	4
	Single-Family Low Income Residential Gas Service	G-10					Single-Family Low Income Residential Gas Service	G-10					
5	Basic Service Charge per Month		$ 7.50			$ 7.50	Basic Service Charge per Month		$ 7.50			$ 7.50	5
	Delivery Charge per Therm						Delivery Charge per Therm						
	Summer (May - October)						Summer (May - October)						
6	All Usage		$ 0.55343	$ (0.07622)	$ 0.70873	$ 1.18594	All Usage		$ 0.70902	$ (0.07622)	$ 0.70873	$ 1.34153	6
	Winter (November - April)						Winter (November - April)						
7	First 150 Therms		$ 0.31624	$ (0.07622)	$ 0.70873	$ 0.94875	First 150 Therms		$ 0.30656	$ (0.07622)	$ 0.70873	$ 0.93907	7
8	Over 150 Therms		0.55343	(0.07622)	0.70873	1.18594	Over 150 Therms		0.70902	(0.07622)	0.70873	1.34153	8
	Multi-Family Low Income Residential Gas Service	G-11					Multi-Family Low Income Residential Gas Service	G-11					
9	Basic Service Charge per Month		$ 7.50			$ 7.50	Basic Service Charge per Month		$ 7.50			$ 7.50	9
	Delivery Charge per Therm						Delivery Charge per Therm						
	Summer (May - October)						Summer (May - October)						
10	All Usage		$ 0.55343	$ (0.07622)	$ 0.70873	$ 1.18594	All Usage		$ 0.70902	$ (0.07622)	$ 0.70873	$ 1.34153	10
	Winter (November - April)						Winter (November - April)						
11	First 150 Therms		$ 0.31624	$ (0.07622)	$ 0.70873	$ 0.94875	First 150 Therms		$ 0.30656	$ (0.07622)	$ 0.70873	$ 0.93907	11
12	Over 150 Therms		0.55343	(0.07622)	0.70873	1.18594	Over 150 Therms		0.70902	(0.07622)	0.70873	1.34153	12
	Special Residential Gas Service for Air Conditioning	G-15					Special Residential Gas Service for Air Conditioning	G-15					
13	Basic Service Charge per Month		$ 10.70			$ 10.70	Basic Service Charge per Month		$ 10.70			$ 10.70	13
	Delivery Charge per Therm						Delivery Charge per Therm						
	Summer (May - October)						Summer (May - October)						
14	First 15 Therms		$ 0.57070	$ (0.07622)	$ 0.70873	$ 1.20321	First 15 Therms		$ 0.70902	$ (0.07622)	$ 0.70873	$ 1.34153	14
15	Over 15 Therms		0.28860	$ (0.07622)	$ 0.70873	0.92111	Over 15 Therms		0.13155	$ (0.07622)	$ 0.70873	0.76406	15
	Winter (November - April)						Winter (November - April)						
16	All Usage		$ 0.57070	$ (0.07622)	$ 0.70873	$ 1.20321	All Usage		$ 0.70902	$ (0.07622)	$ 0.70873	$ 1.34153	16

[1] Delivery changes effective December 1, 2008.
[2] Rate Adjustment and Gas Cost effective June 28, 2010.

SOUTHWEST GAS CORPORATION
ARIZONA
RATE SUMMARY AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

			Present Rates						Settlement Rates				
Line No.	Description	Schedule	Delivery Charge [1]	Rate Adjustment [2]	Gas Cost [2]	Currently Effective Tariff Rate	Description	Schedule	Delivery Charge	Rate Adjustment [2]	Gas Cost [2]	Effective Tariff Rate	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
	Master Metered Mobile Home Park Gas Service	G-20					Master Metered Mobile Home Park Gas Service	G-20					
1	Basic Service Charge per Month		$ 66.00			$ 66.00	Basic Service Charge per Month		$ 66.00			$ 66.00	1
	Delivery Charge per Therm						Delivery Charge per Therm						
2	All Usage		$ 0.40830	$ (0.06400)	$ 0.70873	$ 1.05303	All Usage		$ 0.47470	$ (0.06400)	$ 0.70873	$ 1.11943	2
	General Gas Service	G-25					General Gas Service	G-25					
	Basic Service Charge per Month						Basic Service Charge per Month						
3	Small		$ 27.50			$ 27.50	Small		$ 27.50			$ 27.50	3
4	Medium		43.50			43.50	Medium		43.50			43.50	4
5	Large		160.00			160.00	Large-1		80.00			80.00	5
6							Large-2		470.00			470.00	6
7	Transportation Eligible		950.00			950.00	Transportation Eligible		950.00			950.00	7
	Delivery Charge per Therm						Delivery Charge per Therm						
8	Small, All Usage		$ 0.57059	$ (0.07622)	$ 0.70873	$ 1.20310	Small, All Usage		$ 0.85098	$ (0.07622)	$ 0.70873	$ 1.48349	8
9	Medium, All Usge		0.37996	$ (0.07622)	$ 0.70873	1.01247	Medium, All Usge		0.46179	$ (0.07622)	$ 0.70873	1.09430	9
10	Large, All Usage		0.29084	$ (0.07622)	$ 0.70873	0.92335	Large-1, All Usage		0.41512	$ (0.07622)	$ 0.70873	1.04763	10
11							Large-2, All Usage		0.29041	$ (0.07622)	$ 0.70873	0.92292	11
12	Transportation Eligible		0.10776	$ (0.07622)	$ 0.70873	0.74027	Transportation Eligible		0.10980	$ (0.07622)	$ 0.70873	0.74231	12
	Demand Charge						Demand Charge						
13	Transportation Eligible		$ 0.062340			$ 0.062340	Transportation Eligible		$ 0.082974			$ 0.082974	13
	Optional Gas Service	G-30					Optional Gas Service	G-30					
14	Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 27.				Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 27.				14
	Delivery Charge per Therm						Delivery Charge per Therm						
15	All Usage		As Specified on A.C.C. Sheet No. 28.				All Usage		As Specified on A.C.C. Sheet No. 28.				15
	Air Conditioning Gas Service	G-40					Air Conditioning Gas Service	G-40					
16	Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 32.				Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 32.				16
	Delivery Charge per Therm						Delivery Charge per Therm						
17	All Usage		$ 0.11010	$ (0.07622)	$ 0.70873	$ 0.74261	All Usage		$ 0.13155	$ (0.07622)	$ 0.70873	$ 0.76406	17
	Street Lighting Gas Service	G-45					Street Lighting Gas Service	G-45					
	Delivery Charge per Therm of Rated Capacity						Delivery Charge per Therm of Rated Capacity						
18	All Usage		$ 0.61050	$ (0.07622)	$ 0.70873	$ 1.24301	All Usage		$ 0.69603	$ (0.07622)	$ 0.70873	$ 1.32854	18

[1] Delivery changes effective December 1, 2008.
[2] Rate Adjustment and Gas Cost effective June 28, 2010.

SOUTHWEST GAS CORPORATION
ARIZONA
RATE SUMMARY AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

			Present Rates						Settlement Rates				
Line No.	Description	Schedule	Delivery Charge [1]	Rate Adjustment [2]	Gas Cost [2]	Currently Effective Tariff Rate	Description	Schedule	Delivery Charge	Rate Adjustment [2]	Gas Cost [2]	Effective Tariff Rate	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
	Gas Service for Compression on Customer's Premises	G-55					Gas Service for Compression on Customer's Premises	G-55					
	Basic Service Charge per Month						Basic Service Charge per Month						
1	Small		$ 27.50			$ 27.50	Small		$ 27.50			$ 27.50	1
2	Large		250.00			250.00	Large		250.00			250.00	2
3	Residential		10.70			10.70	Residential		10.70			10.70	3
	Delivery Charge per Therm						Delivery Charge per Therm						
4	All Usage		$ 0.18678	$ (0.07622)	$ 0.70873	$ 0.81929	All Usage		$ 0.21593	$ (0.07622)	$ 0.70873	$ 0.84844	4
	Electric Generation Gas Service	G-60					Electric Generation Gas Service	G-60					
5	Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 40.				Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 40.				5
	Delivery Charge per Therm						Delivery Charge per Therm						
6	All Usage		$ 0.13535	$ (0.07622)	$ 0.70873	$ 0.76786	All Usage		$ 0.15504	$ (0.07622)	$ 0.70873	$ 0.78755	6
	Small Essential Agriculture User Gas Service	G-75					Small Essential Agriculture User Gas Service	G-75					
7	Basic Service Charge per Month		$ 120.00			$ 120.00	Basic Service Charge per Month		$ 120.00			$ 120.00	7
	Delivery Charge per Therm						Delivery Charge per Therm						
8	All Usage		$ 0.24396	$ (0.07622)	$ 0.70873	$ 0.87647	All Usage		$ 0.28197	$ (0.07622)	$ 0.70873	$ 0.91448	8
	Natural Gas Engine Gas Service	G-80					Natural Gas Engine Gas Service	G-80					
	Basic Service Charge per Month						Basic Service Charge per Month						
9	Off-Peak Season (October - March)		$ 0.00			$ 0.00	Off-Peak Season (October - March)		$ 0.00			$ 0.00	9
10	Peak Season (April - September)		125.00			125.00	Peak Season (April - September)		125.00			125.00	10
	Delivery Charge per Therm						Delivery Charge per Therm						
11	All Usage		$ 0.19069	$ 0.00378	$ 0.50345	$ 0.69792	All Usage		$ 0.22197	$ 0.00378	$ 0.50345	$ 0.72920	11
	Components of Rate Adjustment												
12	Low Income Ratepayer Assistance (LIRA)			$ 0.01222						$ 0.01222			12
13	Demand Side Management			$ 0.00200						$ 0.00200			13
14	Gas Research Fund			$ 0.00103						$ 0.00103			14
15	Department of Transportation			$ 0.00075						$ 0.00075			15
16	Gas Cost Balancing Account Adjustment			$ (0.08000)						$ (0.08000)			16
17	Total			$ (0.06400)						$ (0.06400)			17
18	Total Excluding LIRA			$ (0.07622)						$ (0.07622)			18

[1] Delivery changes effective December 1, 2008.
[2] Rate Adjustment and Gas Cost effective June 28, 2010.

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

			Billing Determinants				Revenue at Proposed Rates							Increase / Decrease		
Line No.	Description	Proposed Schedule Number	Number of Bills	Sales (Therms)	Basic Service Charge	Delivery Charge	Basic Service Charge	Delivery Charge	Total Margin	Gas Cost	Total Revenue	Revenue at Present Rates	Dollars	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	Single-Family Residential Gas Service	G-5													
1	Basic Service Charge per Month		10,418,131		$ 10.70		$ 111,474,002		$ 111,474,002		$ 111,474,002	$ 111,474,002	$ 0	0.0%	1
	Delivery Charge per Therm														
2	Sales-All Usage			261,822,441		$ 0.70902		$ 185,637,347	185,637,347	$ 185,561,419	371,198,766	334,983,486	36,215,280	10.8%	2
3	Total Single-Family Residential		10,418,131	261,822,441			$ 111,474,002	$ 185,637,347	$ 297,111,349	$ 185,561,419	$ 482,672,768	$ 446,457,488	$ 36,215,280	8.1%	3
	Multi-Family Residential Gas Service	G-6													
4	Basic Service Charge per Month		378,334		$ 9.70		$ 3,669,840		$ 3,669,840		$ 3,669,840	$ 3,669,840	$ 0	0.0%	4
	Delivery Charge per Therm														
5	Sales-All Usage			5,862,713		$ 0.70902		$ 4,156,781	4,156,781	$ 4,155,081	8,311,862	7,399,682	912,180	12.3%	5
6	Total Multi-Family Residential		378,334	5,862,713			$ 3,669,840	$ 4,156,781	$ 7,826,621	$ 4,155,081	$ 11,981,702	$ 11,069,522	$ 912,180	8.2%	6
	Single-Family Low Income Residential	G-10													
7	Basic Service Charge		415,096		$ 7.50		$ 3,113,220		$ 3,113,220		$ 3,113,220	$ 3,113,220	$ 0	0.0%	7
	Delivery Charge per Therm														
	Summer (May - October)														
8	Sales-All Usage			2,301,968		$ 0.70902		$ 1,632,141	1,632,141	$ 1,631,474	3,263,615	2,905,452	358,163	12.3%	8
	Winter (November - April)														
9	Sales-All Usage			8,193,230		0.70902		5,809,164	5,809,164	5,806,788	11,615,952	10,341,167	1,274,785	12.3%	9
10	Total Single-Family Low Income		415,096	10,495,198			$ 3,113,220	$ 7,441,305	$ 10,554,525	$ 7,438,262	$ 17,992,787	$ 16,359,839	$ 1,632,948	10.0%	10
	Multi-Family Low Income Residential	G-11													
11	Basic Service Charge per Month		37,729		$ 7.50		$ 282,968		$ 282,968		$ 282,968	$ 282,968	$ 0	0.0%	11
	Delivery Charge per Therm														
	Summer (May - October)														
12	Sales-All Usage			210,209		$ 0.70902		$ 149,042	149,042	$ 148,981	298,023	265,317	32,706	12.3%	12
	Winter (November - April)														
13	Sales-All Usage			500,236		0.70902		354,677	354,677	354,532	709,209	631,378	77,831	12.3%	13
14	Total Multi-Family Low Income		37,729	710,445			$ 282,968	$ 503,719	$ 786,687	$ 503,513	$ 1,290,200	$ 1,179,663	$ 110,537	9.4%	14
	Special Residential Gas Service for Air Conditioning	G-15													
15	Basic Service Charge per Month		1,080		$ 10.70		$ 11,556		$ 11,556		$ 11,556	$ 11,556	$ 0	0.0%	15
	Delivery Charge per Therm														
	Summer (May - October)														
16	Sales-First 15 Therms			6,452		$ 0.70902		$ 4,575	4,575	$ 4,573	9,148	8,255	893	10.8%	16
17	Sales-Over 15 Therms			29,531		0.13155		3,885	3,885	20,930	24,815	29,453	(4,638)	-15.7%	17
	Winter (November - April)														
18	Sales-All Usage			53,236		0.70902		37,745	37,745	37,730	75,475	68,112	7,363	10.8%	18
19	Total Special Residential		1,080	89,219			$ 11,556	$ 46,205	$ 57,761	$ 63,233	$ 120,994	$ 117,376	$ 3,618	3.1%	19
20	Total Residential Gas Service		11,250,370	278,980,016			$ 118,551,586	$ 197,785,357	$ 316,336,943	$ 197,721,508	$ 514,058,451	$ 475,183,888	$ 38,874,563	8.2%	20
	Master Metered Mobile Home Park (MMMHP) Gas Service	G-20													
21	Basic Service Charge per Month		1,812		$ 66.00		$ 119,592		$ 119,592		$ 119,592	$ 119,592	$ 0	0.0%	21
	Delivery Charge per Therm														
22	Sales-All Usage			1,823,059		$ 0.47470		$ 865,406	865,406	$ 1,292,057	2,157,463	2,036,412	121,051	5.9%	22
23	Total MMMHP Gas Service		1,812	1,823,059			$ 119,592	$ 865,406	$ 984,998	$ 1,292,057	$ 2,277,055	$ 2,156,004	$ 121,051	5.6%	23

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Proposed Schedule Number	Billing Determinants: Number of Bills	Billing Determinants: Sales (Therms)	Basic Service Charge	Delivery Charge	Revenue at Proposed Rates: Basic Service Charge	Revenue at Proposed Rates: Delivery Charge	Revenue at Proposed Rates: Total Margin	Revenue at Proposed Rates: Gas Cost	Revenue at Proposed Rates: Total Revenue	Revenue at Present Rates	Increase / Decrease: Dollars	Increase / Decrease: Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	General Gas Service - Small	G-25(S)													
	Basic Service Charge per Month														
1	Sales		205,557		$ 27.50		$ 5,652,818		$ 5,652,818		$ 5,652,818	$ 5,652,818	$ 0	0.0%	1
2	Transportation		36		27.50		990		990		990	990	0	0.0%	2
	Delivery Charge per Therm														
3	Sales-All Usage			3,951,454		$ 0.85098		$ 3,362,608	3,362,608	$ 2,800,514	6,163,122	5,055,174	1,107,948	21.9%	3
4	Transportation-All Usage			607		0.85098		517	517	0	517	346	171	49.4%	4
5	Total Small General		205,593	3,952,061			$ 5,653,808	$ 3,363,125	$ 9,016,933	$ 2,800,514	$ 11,817,447	$ 10,709,328	$ 1,108,119	10.3%	5
	General Gas Service - Medium	G-25(M)													
	Basic Service Charge per Month														
6	Sales		181,042		$ 43.50		$ 7,875,327		$ 7,875,327		$ 7,875,327	$ 7,875,327	$ 0	0.0%	6
7	Transportation		348		43.50		15,138		15,138		15,138	15,138	0	0.0%	7
	Delivery Charge per Therm														
8	Sales-All Usage			38,541,245		$ 0.46179		$ 17,797,962	17,797,962	$ 27,315,337	45,113,299	41,959,468	3,153,831	7.5%	8
9	Transportation-All Usage			117,316		0.46179		54,175	54,175	0	54,175	44,575	9,600	21.5%	9
10	Total Medium General		181,390	38,658,561			$ 7,890,465	$ 17,852,137	$ 25,742,602	$ 27,315,337	$ 53,057,939	$ 49,894,508	$ 3,163,431	6.3%	10
	General Gas Service - Large-1	G-25(L1)													
	Basic Service Charge per Month														
11	Sales		83,792		$ 80.00		$ 6,703,360		$ 6,703,360		$ 6,703,360	$ 13,406,720	$(6,703,360)	-50.0%	11
12	Transportation		1,080		80.00		86,400		86,400		86,400	172,800	(86,400)	-50.0%	12
	Delivery Charge per Therm														
13	Sales-All Usage			102,012,194		$ 0.41512		$ 42,347,302	42,347,302	$ 72,299,102	114,646,404	101,968,329	12,678,075	12.4%	13
14	Transportation-All Usage			2,051,536		0.41512		851,634	851,634	0	851,634	596,669	254,965	42.7%	14
15	Total Large General Gas Service		84,872	104,063,730			6,789,760	43,198,936	49,988,696	72,299,102	122,287,798	116,144,518	6,143,280	5.3%	15
	General Gas Service - Large-2	G-25(L2)													
	Basic Service Charge per Month														
16	Sales		4,848		$ 470.00		$ 2,278,560		$ 2,278,560		$ 2,278,560	$ 787,200	$ 1,491,360	189.5%	16
17	Transportation		288		470.00		135,360		135,360		135,360	34,560	100,800	291.7%	17
	Delivery Charge per Therm														
18	Sales-All Usage			33,135,165		$ 0.29041		$ 9,622,783	9,622,783	$ 23,483,885	33,106,668	33,120,916	(14,248)	0.0%	18
19	Transportation-All Usage			2,735,757		0.29041		794,491	794,491	0	794,491	795,668	(1,177)	-0.1%	19
20	Total Large General Gas Service		5,136	35,870,922			2,413,920	10,417,274	12,831,194	23,483,885	36,315,079	34,738,344	1,576,735	4.5%	20
	General Gas Service - Transportation Eligible (TE)	G-25(TE)													
	Basic Service Charge per Month														
21	Sales		1,308		$ 950.00		$ 1,242,600		$ 1,242,600		$ 1,242,600	$ 1,242,600	$ 0	0.0%	21
22	Transportation		1,020		950.00		969,000		969,000		969,000	969,000	0	0.0%	22
	Demand Charge per Month														
23	Sales			4,702,698	0.082974			$ 4,682,420	4,682,420		4,682,420	3,517,994	1,164,426	33.1%	23
24	Transportation			6,735,792	0.082974			$ 6,706,747	6,706,747		6,706,747	5,038,911	1,667,836	33.1%	24
	Delivery Charge per Therm														
25	Sales-All Usage			36,741,268		$ 0.10980		4,034,191	4,034,191	$ 26,039,639	30,073,830	29,998,878	74,952	0.2%	25
26	Transportation-All Usage			64,605,187		0.10980		7,093,650	7,093,650	0	7,093,650	6,961,855	131,795	1.9%	26
27	Total Transportation Eligible General		2,328	101,346,455			$ 2,211,600	$ 22,517,008	$ 24,728,608	$ 26,039,639	$ 50,768,247	$ 47,729,238	$ 3,039,009	6.4%	27
28	Total General Gas Service		479,319	283,891,729			$ 24,959,553	$ 97,348,480	$ 122,308,033	$ 151,938,477	$ 274,246,510	$ 259,215,936	$ 15,030,574	5.8%	28

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Proposed Schedule Number	Billing Determinants: Number of Bills	Billing Determinants: Sales (Therms)	Basic Service Charge	Delivery Charge	Revenue at Proposed Rates: Basic Service Charge	Revenue at Proposed Rates: Delivery Charge	Revenue at Proposed Rates: Total Margin	Revenue at Proposed Rates: Gas Cost	Revenue at Proposed Rates: Total Revenue	Revenue at Present Rates	Increase / Decrease: Dollars	Increase / Decrease: Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	Air Conditioning Gas Service	G-40													
	Basic Service Charge per Month														
1	Sales - With Other Service - No BSC		36		$ 0.00		$ 0		$ 0		$ 0	$ 0	$ 0	0.0%	1
2	Sales-General Service - Small		184		27.50		5,060		5,060		5,060	$ 5,060	0	0.0%	2
3	Sales-General Service - Medium		0		43.50		0		0		0	$ 0	0	0.0%	3
4	Sales-General Service - Large 1		24		80.00		1,920		1,920		1,920	$ 3,840	(1,920)	-50.0%	4
5	Sales-Essential Agricultural		36		120.00		4,320		4,320		4,320	$ 4,320	0	0.0%	5
6	Transportation - With Other Service - No BSC		12		0.00		0		0		0	$ 0	0	0.0%	6
	Delivery Charge per Therm														
7	Sales-All Usage			359,940		$ 0.13155		$ 47,350	47,350	$ 255,100	302,450	294,729	7,721	2.6%	7
8	Transportation-Usage			266,305		0.13155		35,032	35,032	0	35,032	29,320	5,712	19.5%	8
9	Total Air Conditioning		292	626,245			$ 11,300	$ 82,382	$ 93,682	$ 255,100	$ 348,782	$ 337,269	$ 11,513	3.4%	9
	Street Lighting Gas Service	G-45													
	Delivery Charge per Therm														
10	All Usage		180	87,447		$ 0.69603		$ 60,866	$ 60,866	$ 61,976	$ 122,842	$ 115,362	$ 7,480	6.5%	10
11	Total Street Lighting Gas Service		180	87,447			$ 0	$ 60,866	$ 60,866	$ 61,976	$ 122,842	$ 115,362	$ 7,480	6.5%	11
	Gas Service for Compression on Customer's Premises	G-55													
	Basic Service Charge per Month														
12	Sales-Small		192		$ 27.50		$ 5,280		$ 5,280		$ 5,280	$ 5,280	$ 0	0.0%	12
13	Sales-Large		240		250.00		60,000		60,000		60,000	$ 60,000	0	0.0%	13
14	Sales-Residential		984		10.70		10,529		10,529		10,529	$ 10,529	0	0.0%	14
15	Transportation-Large		48		250.00		12,000		12,000		12,000	$ 12,000	0	0.0%	15
	Delivery Charge per Therm														
16	Sales-Small			101,442		$ 0.21593		$ 21,904	21,904	$ 71,895	93,799	90,842	2,957	3.3%	16
17	Sales-Large			1,244,594		0.21593		268,745	268,745	882,081	1,150,826	1,114,546	36,280	3.3%	17
18	Sales-Residential			35,148		0.21593		7,590	7,590	24,910	32,500	31,475	1,025	3.3%	18
19	Transportation-Large			2,751,372		0.21593		594,104	594,104	0	594,104	513,901	80,203	15.6%	19
20	Total CNG		1,464	4,132,556			$ 87,809	$ 892,343	$ 980,152	$ 978,886	$ 1,959,038	$ 1,838,573	$ 120,465	6.6%	20
	Electric Generation Gas Service	G-60													
	Basic Service Charge per Month														
21	Sales-General Service - Small		36		$ 27.50		$ 990		$ 990		$ 990	$ 990	$ 0	0.0%	21
22	Sales-General Service - Medium		24		43.50		1,044		1,044		1,044	$ 1,044	0	0.0%	22
23	Sales-General Service - Large-1		36		80.00		2,880		2,880		2,880	$ 5,760	(2,880)	-50.0%	23
24	Sales-General Service - TE		12		950.00		11,400		11,400		11,400	$ 11,400	0	0.0%	24
25	Sales-Essential Agricultural		12		120.00		1,440		1,440		1,440	$ 1,440	0	0.0%	25
26	Transportation - General Service - Small		24		27.50		660		660		660	$ 660	0	0.0%	26
27	Transportation - General Service - TE		72		950.00		68,400		68,400		68,400	$ 68,400	0	0.0%	27
	Delivery Charge per Therm														
28	Sales-All Usage			1,235,925		$ 0.15504		$ 191,618	191,618	$ 875,937	1,067,555	1,043,219	24,336	2.3%	28
29	Transportation-All Usage			20,137,894		0.15504		3,122,179	3,122,179	0	3,122,179	2,725,664	396,515	14.5%	29
30	Total Electric Generation		216	21,373,819			$ 86,814	$ 3,313,797	$ 3,400,611	$ 875,937	$ 4,276,548	$ 3,858,577	$ 417,971	10.8%	30

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Proposed Schedule Number	Billing Determinants: Number of Bills	Billing Determinants: Sales (Therms)	Basic Service Charge	Delivery Charge	Revenue at Proposed Rates: Basic Service Charge	Revenue at Proposed Rates: Delivery Charge	Revenue at Proposed Rates: Total Margin	Revenue at Proposed Rates: Gas Cost	Revenue at Proposed Rates: Total Revenue	Revenue at Present Rates	Increase / Decrease: Dollars	Increase / Decrease: Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	Sm. Essential Agriculture User Gas Service	G-75													
	Basic Service Charge per Month														
1	Sales		587		$ 120.00		$ 70,440		$ 70,440		$ 70,440	$ 70,440	$ 0	0.0%	1
2	Transportation		24		120.00		2,880		2,880		2,880	$ 2,880	0	0.0%	2
	Delivery Charge per Therm														
3	Sales-All Usage			2,647,768		$ 0.28197		$ 746,591	746,591	$ 1,876,553	2,623,144	2,522,502	100,642	4.0%	3
4	Transportation-All Usage			32,852		0.28197		9,263	9,263	0	9,263	8,015	1,248	15.6%	4
5	Total Small Essential Agricultural		611	2,680,520			$ 73,320	$ 755,854	$ 829,174	$ 1,876,553	$ 2,705,727	$ 2,603,837	$ 101,890	3.9%	5
	Natural Gas Engine Gas Service	G-60													
	Basic Service Charge per Month														
6	Sales-Off-Peak Season		1,951		$ 0.00		$ 0		$ 0		$ 0	$ 0	$ 0	0.0%	6
7	Sales-Peak Season		1,951		125.00		243,813		243,813		243,813	243,813	0	0.0%	7
8	Transportation-Off-Peak Season		48		0.00		0		0		0	-	0	0.0%	8
9	Transportation-Peak Season		48		125.00		6,000		6,000		6,000	6,000	0	0.0%	9
	Delivery Charge per Therm														
10	Sales-All Usage			7,272,353		$ 0.22197		$ 1,614,244	1,614,244	$ 3,661,266	5,275,510	5,048,031	227,479	4.5%	10
11	Transportation-All Usage			405,928		0.22197		90,104	90,104	0	90,104	77,406	12,698	16.4%	11
12	Total Natural Gas Engine		3,997	7,678,281			$ 249,813	$ 1,704,348	$ 1,954,161	$ 3,661,266	$ 5,615,427	$ 5,375,250	$ 240,177	4.5%	12
13	Total Tariff Sales		11,738,261	601,273,772			144,139,787	302,808,833	446,948,620	358,661,760	805,610,380	750,684,696	54,925,684	7.3%	13
14	Optional Gas Service	G-30	432	41,631,695					$ 4,024,536	$ 20,497,955	$ 24,522,491	$ 24,522,491	$ 0	0.0%	14
15	Special Contract Service	B-1	209	35,199,807					$ 2,763,591		$ 2,763,591	$ 2,763,591	$ 0	0.0%	15
16	Other Operating Revenues						$ 12,096,356		$ 12,096,356		$ 12,096,356	$ 12,096,356	$ 0	0.0%	16
17	Total		11,738,902	678,105,274			$ 156,236,143	$ 302,808,833	$ 465,833,103	$ 379,159,715	$ 844,992,818	$ 790,067,134	$ 54,925,684	6.95%	17
18	Total Revenue Requirement								465,834,520						18
19	Over/(Under)								$ (1,417)						19

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
SINGLE-FAMILY RESIDENTIAL GAS SERVICE

Line No.	Description	Monthly Consumption (Therms)	Monthly Bill At Currently Effective Rates	Monthly Bill At Proposed Tariff Rates	Increase/(Decrease) Dollars	Increase/(Decrease) Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
	Summer Season Bills						
1	75 Percent Average Use	8	$ 20.42	$ 21.53	$ 1.11	5.44%	1
2	Average Summer Use	11	24.07	25.59	1.52	6.31%	2
3	125 Percent Average Use	14	27.72	29.65	1.93	6.96%	3
	Winter Season Bills						
4	75 Percent Average Use	29	$ 45.95	$ 49.96	$ 4.01	8.73%	4
5	Average Winter Use	39	58.10	63.50	5.40	9.29%	5
6	125 Percent Average Use	49	70.26	77.03	6.77	9.64%	6

Effective Tariff Rates [1]	Total Amount	Delivery Charge	Rate Adjustment	Gas Cost
Basic Service Charge per Month	$ 10.70			
Commodity Charge				
All Usage	$ 1.21543	$ 0.57070	$ (0.06400)	$ 0.70873
Settlement Rates				
Basic Service Charge per Month	$ 10.70			
Commodity Charge				
All Usage	$ 1.35375	$ 0.70902	$ (0.06400)	$ 0.70873

[1] Rates effective June 28, 2010 including all adjustments.

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
MULTI-FAMILY RESIDENTIAL GAS SERVICE

			Monthly Bill				
Line No.	Description	Monthly Consumption (Therms)	At Currently Effective Rates	At Proposed Tariff Rates	Increase/(Decrease) Dollars	Increase/(Decrease) Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
	Summer Season Bills						
1	75 Percent Average Use	8	$ 19.29	$ 20.53	$ 1.24	6.43%	1
2	Average Summer Use	10	21.68	23.24	1.56	7.20%	2
3	125 Percent Average Use	13	25.28	27.30	2.02	7.99%	3
	Winter Season Bills						
4	75 Percent Average Use	16	$ 28.87	$ 31.36	$ 2.49	8.62%	4
5	Average Winter Use	21	34.86	38.13	3.27	9.38%	5
6	125 Percent Average Use	26	40.85	44.90	4.05	9.91%	6

Effective Tariff Rates [1]	Amount	Delivery Charge	Rate Adjustment	Gas Cost
Basic Service Charge per Month	$ 9.70			
Commodity Charge				
All Usage	$ 1.19816	$ 0.55343	$ (0.06400)	$ 0.70873
Settlement Rates				
Basic Service Charge per Month	$ 9.70			
Commodity Charge				
All Usage	$ 1.35375	$ 0.70902	$ (0.06400)	$ 0.70873

[1] Rates effective June 28, 2010 including all adjustments.

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
SINGLE-FAMILY LOW-INCOME RESIDENTIAL GAS SERVICE

Line No.	Description	Monthly Consumption (Therms)	Monthly Bill At Currently Effective Rates	Monthly Bill At Proposed Tariff Rates	Increase/(Decrease) Dollars	Increase/(Decrease) Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
	Summer Season Bills						
1	75 Percent Average Use	8	$ 16.99	$ 18.23	$ 1.24	7.30%	1
2	Average Summer Use	11	20.55	22.26	1.71	8.32%	2
3	125 Percent Average Use	14	24.10	26.28	2.18	9.05%	3
	Winter Season Bills						
4	75 Percent Average Use	29	$ 35.01	$ 34.73	$ (0.28)	(0.80%)	4
5	Average Winter Use	39	44.50	44.12	(0.38)	(0.85%)	5
6	125 Percent Average Use	49	53.99	53.51	(0.48)	(0.89%)	6

Effective Tariff Rates [1]	Amount	Delivery Charge	Rate Adjustment	Gas Cost
Basic Service Charge per Month	$ 7.50			
Commodity Charge Summer				
All Usage	1.18594	$ 0.55343	$ (0.07622)	$ 0.70873
Commodity Charge Winter				
First 150 Therms	$ 0.94875	$ 0.31624	$ (0.07622)	$ 0.70873
Over 150 Therms	1.18594	0.55343	(0.07622)	0.70873
Settlement Rates				
Basic Service Charge per Month	$ 7.50			
Commodity Charge Summer				
All Usage	$ 1.34153	$ 0.70902	$ (0.07622)	$ 0.70873
Commodity Charge Winter				
First 150 therms	$ 0.93907	$ 0.30656	$ (0.07622)	$ 0.70873
Over 150 therms	1.34153	0.70902	(0.07622)	0.70873

[1] Rates effective June 28, 2010 including all adjustments.

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE A
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
MULTIFAMILY LOW-INCOME RESIDENTIAL GAS SERVICE

Line No.	Description	Monthly Consumption (Therms)	At Currently Effective Rates	At Proposed Tariff Rates	Increase/(Decrease) Dollars	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
	Summer Season Bills						
1	75 Percent Average Use	8	$ 16.99	$ 18.23	$ 1.24	7.30%	1
2	Average Summer Use	11	20.55	22.26	1.71	8.32%	2
3	125 Percent Average Use	14	24.10	26.28	2.18	9.05%	3
	Winter Season Bills						
4	75 Percent Average Use	20	$ 26.48	$ 26.28	$ (0.20)	(0.76%)	4
5	Average Winter Use	26	32.17	31.92	(0.25)	(0.78%)	5
6	125 Percent Average Use	33	38.81	38.49	(0.32)	(0.82%)	6

Effective Tariff Rates [1]	Amount	Delivery Charge	Rate Adjustment	Gas Cost
Basic Service Charge per Month	$ 7.50			
Commodity Charge Summer				
All Usage	$ 1.18594	$ 0.55343	$ (0.07622)	$ 0.70873
Commodity Charge Winter				
First 150 Therms	$ 0.94875	$ 0.31624	$ (0.07622)	$ 0.70873
Over 150 Therms	1.18594	0.55343	(0.07622)	0.70873
Settlement Rates				
Basic Service Charge per Month	$ 7.50			
Commodity Charge Summer				
All Usage	$ 1.34153	$ 0.70902	$ (0.07622)	$ 0.70873
Commodity Charge Winter				
First 150 therms	$ 0.93907	$ 0.30656	$ (0.07622)	$ 0.70873
Over 150 therms	1.34153	0.70902	(0.07622)	0.70873

[1] Rates effective June 28, 2010 including all adjustments.

EXHIBIT D

(RATE SCHEDULES FOR ALTERNATIVE B)

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF REVENUES AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Schedule Number	Revenues: Present Rates	Revenues: Proposed Rates	Increase/(Decrease): Dollars	Increase/(Decrease): Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
1	Single-Family Residential Gas Service	G-5	$ 446,457,488	$ 481,133,252	$ 34,675,764	7.77%	1
2	Multi-Family Residential Gas Service	G-6	11,069,522	11,947,229	877,707	7.93%	2
3	Single-Family Low Income Residential Gas Service [1]	G-10	16,359,839	17,931,076	1,571,237	9.60%	3
4	Multi-Family Low Income Residential Gas Service [1]	G-11	1,179,663	1,286,023	106,360	9.02%	4
5	Special Residential Gas Service for Air Conditioning	G-15	117,376	120,620	3,244	2.76%	5
6	Total Residential Gas Service		$ 475,183,888	$ 512,418,200	$ 37,234,312	7.84%	6
7	Master Metered Mobile Home Park Gas Service	G-20	2,156,004	2,271,932	115,928	5.38%	7
	General Gas Service						
8	Small	G-25(S)	10,709,328	11,770,654	1,061,326	9.91%	8
9	Medium	G-25(M)	49,894,508	52,924,567	3,030,059	6.07%	9
10	Large-1	G-25(L1)	116,144,518	122,028,679	5,884,161	5.07%	10
11	Large-2	G-25(L2)	34,738,344	36,248,718	1,510,374	4.35%	11
12	Transportation Eligible	G-23(TE)	47,729,238	50,639,790	2,910,552	6.10%	12
13	Air Conditioning Gas Service	G-40	337,269	348,294	11,025	3.27%	13
14	Street Lighting Gas Service	G-45	115,362	122,526	7,164	6.21%	14
	Compression on Customer's Premises						
15	Residential	G-55	42,004	42,985	981	2.34%	15
16	Small		96,122	98,955	2,833	2.95%	16
	Large		1,700,447	1,812,015	111,568	6.56%	
18	Total Compression on Customer's Premises Gas Service		$ 1,838,573	$ 1,953,955	$ 115,382	6.28%	18
19	Electric Generation Gas Service	G-60	3,858,577	4,258,808	400,231	10.37%	19
20	Small Essential Agriculture User Gas Service	G-75	2,603,837	2,701,439	97,602	3.75%	20
21	Natural Gas Engine Gas Service	G-80	5,375,250	5,605,292	230,042	4.28%	21
22	Total Gas Sales & Full Margin Transportation		$ 750,684,696	$ 803,292,854	52,608,158	7.01%	22
23	Optional Gas Service	G-30	24,522,491	24,522,491	0	0.00%	23
24	Special Contract Service	B-1	2,763,591	2,763,591	0	0.00%	24
25	Other Operating Revenue		12,096,356	12,096,356	0	0.00%	25
26	Total Arizona Revenue		$ 790,067,134	$ 842,675,292	$ 52,608,158	6.66%	26
	[1] Excluding low-income rate discount.						
	Low-Income Including Rate Discount						
27	Single-Family Low Income Residential Gas Service	G-10	$ 13,629,700	$ 13,870,412	$ 240,712	1.77%	27
28	Multi-Family Low Income Residential Gas Service	G-11	$ 1,006,940	$ 1,031,567	$ 24,627	2.45%	28

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF MARGIN AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Schedule Number	Margin: Present Rates	Margin: Proposed Rates	Increase/(Decrease): Dollars	Increase/(Decrease): Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
1	Single-Family Residential Gas Service	G-5	$ 260,896,069	$ 295,571,833	$ 34,675,764	13.29%	1
2	Multi-Family Residential Gas Service	G-6	6,914,441	7,792,148	877,707	12.69%	2
3	Single-Family Low Income Residential Gas Service	G-10	8,921,577	10,492,814	1,571,237	17.61%	3
4	Multi-Family Low Income Residential Gas Service	G-11	676,150	782,510	106,360	15.73%	4
5	Special Residential Gas Service for Air Conditioning	G-15	54,143	57,387	3,244	5.99%	5
6	Total Residential Gas Service		$ 277,462,380	$ 314,696,692	$ 37,234,312	13.42%	6
7	Master Metered Mobile Home Park Gas Service	G-20	863,947	979,875	115,928	13.42%	7
	General Gas Service						
8	Small	G-25(S)	7,908,814	8,970,140	1,061,326	13.42%	8
9	Medium	G-25(M)	22,579,171	25,609,230	3,030,059	13.42%	9
10	Large-1	G-25(L1)	43,845,416	49,729,577	5,884,161	13.42%	10
11	Large-2	G-25(L2)	11,254,459	12,764,833	1,510,374	13.42%	11
12	Transportation Eligible	G-25(TE)	21,689,599	24,600,151	2,910,552	13.42%	12
13	Air Conditioning Gas Service	G-40	82,169	93,194	11,025	13.42%	13
14	Street Lighting Gas Service	G-45	53,386	60,550	7,164	13.42%	14
	Compression on Customer's Premises	G-55					
15	Residential		17,094	18,075	981	5.74%	15
16	Small		24,227	27,060	2,833	11.69%	16
17	Large		818,366	929,934	111,568	13.63%	17
18	Total Compression on Customer's Premises Gas Service		$ 859,687	$ 975,069	$ 115,382	13.42%	18
19	Electric Generation Gas Service	G-60	2,982,640	3,382,871	400,231	13.42%	19
20	Small Essential Agriculture User Gas Service	G-75	727,284	824,886	97,602	13.42%	20
21	Natural Gas Engine Gas Service	G-80	1,713,984	1,944,026	230,042	13.42%	21
22	Total Sales and Full Margin Transportation		$ 392,022,936	$ 444,631,094	$ 52,608,158	13.42%	22
23	Optional Gas Service	G-30	4,024,536	4,024,536	0	0.00%	23
24	Special Contract Service	B-1	2,763,591.4	2,763,591	0	0.00%	24
25	Other Operating Revenue		12,096,355.6	12,096,356	0	0.00%	25
26	Total Arizona Revenue		$ 410,907,419	$ 463,515,577	$ 52,608,158	12.80%	26

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF GAS COSTS AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Schedule Number	Gas Cost: Present Rates	Gas Cost: Proposed Rates	Increase/(Decrease): Dollars	Increase/(Decrease): Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
1	Single-Family Residential Gas Service	G-5	$ 185,561,419	$ 185,561,419	$ -	0.00%	1
2	Multi-Family Residential Gas Service	G-6	4,155,081	4,155,081	-	0.00%	2
3	Single-Family Low Income Residential Gas Service	G-10	7,438,262	7,438,262	-	0.00%	3
4	Multi-Family Low Income Residential Gas Service	G-11	503,513	503,513	-	0.00%	4
5	Special Residential Gas Service for Air Conditioning	G-15	63,233	63,233	-	0.00%	5
6	Master Metered Mobile Home Park Gas Service	G-20	1,292,057	1,292,057	-	0.00%	6
	General Gas Service						
7	Small	G-25(S)	2,800,514	2,800,514	-	0.00%	7
8	Medium	G-25(M)	27,315,337	27,315,337	-	0.00%	8
9	Large-1	G-25(L1)	72,299,102	72,299,102	-	0.00%	9
10	Large-2	G-25(L2)	23,483,885	23,483,885		0.00%	10
11	Transportation Eligible	G-25(TE)	26,039,639	26,039,639	-	0.00%	11
12	Optional Gas Service	G-30	20,497,955	20,497,955	-	0.00%	12
13	Air-Conditioning Gas Service	G-40	255,100	255,100	-	0.00%	13
14	Street Lighting Gas Service	G-45	61,976	61,976	-	0.00%	14
	Gas Service for Compression on Customer's Premises	G-55					
15	Residential		24,910	24,910	-	0.00%	15
16	Small		71,895	71,895	-	0.00%	16
17	Large		882,081	882,081	-	0.00%	17
18	Electric Generation Gas Service	G-60	875,937	875,937	-	0.00%	18
19	Small Essential Agriculture User Gas Service	G-75	1,876,553	1,876,553	-	0.00%	19
20	Natural Gas Engine Gas Service	G-80	3,661,266	3,661,266	-	0.00%	20
21	Total Gas Sales		$ 379,159,715	$ 379,159,715	$ -	0.00%	21
22	Special Contract Service	B-1	-	-	-	0.00%	22
23	Other Operating Revenue		-	-	-	0.00%	23
24	Total Arizona Revenue		$ 379,159,715	$ 379,159,715	$ -	0.00%	24

SOUTHWEST GAS CORPORATION
ARIZONA
RATE SUMMARY AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description (a)	Schedule (b)	Present Rates: Delivery Charge [1] (c)	Present Rates: Rate Adjustment [2] (d)	Present Rates: Gas Cost [2] (e)	Currently Effective Tariff Rate (f)	Description (g)	Schedule (h)	Settlement Rates: Delivery Charge (i)	Settlement Rates: Rate Adjustment [2] (j)	Settlement Rates: Gas Cost [2] (k)	Effective Tariff Rate (l)	Line No.
	Single-Family Residential Gas Service	G-5					Single-Family Residential Gas Service	G-5					
1	Basic Service Charge per Month		$ 10.70			$ 10.70	Basic Service Charge per Month		$ 10.70			$ 10.70	1
	Delivery Charge per Therm						Delivery Charge per Therm						
2	All Usage		$ 0.57070	$ (0.06400)	$ 0.70873	$ 1.21543	All Usage		$ 0.70314	$ (0.06400)	$ 0.70873	$ 1.34787	2
	Multi-Family Residential Gas Service	G-6					Multi-Family Residential Gas Service	G-6					
3	Basic Service Charge per Month		$ 9.70			$ 9.70	Basic Service Charge per Month		$ 9.70			$ 9.70	3
	Delivery Charge per Therm						Delivery Charge per Therm						
4	All Usage		$ 0.55343	$ (0.06400)	$ 0.70873	$ 1.19816	All Usage		$ 0.70314	$ (0.06400)	$ 0.70873	$ 1.34787	4
	Single-Family Low Income Residential Gas Service	G-10					Single-Family Low Income Residential Gas Service	G-10					
5	Basic Service Charge per Month		$ 7.50			$ 7.50	Basic Service Charge per Month		$ 7.50			$ 7.50	5
	Delivery Charge per Therm						Delivery Charge per Therm						
	Summer (May - October)						Summer (May - October)						
6	All Usage		$ 0.55343	$ (0.07622)	$ 0.70873	$ 1.18594	All Usage		$ 0.70314	$ (0.07622)	$ 0.70873	$ 1.33565	6
	Winter (November - April)						Winter (November - April)						
7	First 150 Therms		$ 0.31624	$ (0.07622)	$ 0.70873	$ 0.94875	First 150 Therms		$ 0.30245	$ (0.07622)	$ 0.70873	$ 0.93496	7
8	Over 150 Therms		0.55343	(0.07622)	0.70873	1.18594	Over 150 Therms		0.70314	(0.07622)	0.70873	1.33565	8
	Multi-Family Low Income Residential Gas Service	G-11					Multi-Family Low Income Residential Gas Service	G-11					
9	Basic Service Charge per Month		$ 7.50			$ 7.50	Basic Service Charge per Month		$ 7.50			$ 7.50	9
	Delivery Charge per Therm						Delivery Charge per Therm						
	Summer (May - October)						Summer (May - October)						
10	All Usage		$ 0.55343	$ (0.07622)	$ 0.70873	$ 1.18594	All Usage		$ 0.70314	$ (0.07622)	$ 0.70873	$ 1.33565	10
	Winter (November - April)						Winter (November - April)						
11	First 150 Therms		$ 0.31624	$ (0.07622)	$ 0.70873	$ 0.94875	First 150 Therms		$ 0.30245	$ (0.07622)	$ 0.70873	$ 0.93496	11
12	Over 150 Therms		0.55343	(0.07622)	0.70873	1.18594	Over 150 Therms		0.70314	(0.07622)	0.70873	1.33565	12
	Special Residential Gas Service for Air Conditioning	G-15					Special Residential Gas Service for Air Conditioning	G-15					
13	Basic Service Charge per Month		$ 10.70			$ 10.70	Basic Service Charge per Month		$ 10.70			$ 10.70	13
	Delivery Charge per Therm						Delivery Charge per Therm						
	Summer (May - October)						Summer (May - October)						
14	First 15 Therms		$ 0.57070	$ (0.07622)	$ 0.70873	$ 1.20321	First 15 Therms		$ 0.70314	$ (0.07622)	$ 0.70873	$ 1.33565	14
15	Over 15 Therms		0.28860	$ (0.07622)	$ 0.70873	0.92111	Over 15 Therms		0.13077	$ (0.07622)	$ 0.70873	0.76328	15
	Winter (November - April)						Winter (November - April)						
16	All Usage		$ 0.57070	$ (0.07622)	$ 0.70873	$ 1.20321	All Usage		$ 0.70314	$ (0.07622)	$ 0.70873	$ 1.33565	16

[1] Delivery changes effective December 1, 2008.
[2] Rate Adjustment and Gas Cost effective June 28, 2010.

SOUTHWEST GAS CORPORATION
ARIZONA
RATE SUMMARY AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Schedule	Present Rates: Delivery Charge [1]	Present Rates: Rate Adjustment [2]	Present Rates: Gas Cost [2]	Present Rates: Currently Effective Tariff Rate	Description	Schedule	Settlement Rates: Delivery Charge	Settlement Rates: Rate Adjustment [2]	Settlement Rates: Gas Cost [2]	Settlement Rates: Effective Tariff Rate	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
	Master Metered Mobile Home Park Gas Service	G-20					Master Metered Mobile Home Park Gas Service	G-20					
1	Basic Service Charge per Month		$ 66.00			$ 66.00	Basic Service Charge per Month		$ 66.00			$ 66.00	1
	Delivery Charge per Therm						Delivery Charge per Therm						
2	All Usage		$ 0.40830	$ (0.06400)	$ 0.70873	$ 1.05303	All Usage		$ 0.47189	$ (0.06400)	$ 0.70873	$ 1.11662	2
	General Gas Service	G-25					General Gas Service	G-25					
	Basic Service Charge per Month						Basic Service Charge per Month						
3	Small		$ 27.50			$ 27.50	Small		$ 27.50			$ 27.50	3
4	Medium		43.50			43.50	Medium		43.50			43.50	4
5	Large		160.00			160.00	Large-1		80.00			80.00	5
6							Large-2		470.00			470.00	6
7	Transportation Eligible		950.00			950.00	Transportation Eligible		950.00			950.00	7
	Delivery Charge per Therm						Delivery Charge per Therm						
8	Small, All Usage		$ 0.57059	$ (0.07622)	$ 0.70873	$ 1.20310	Small, All Usage		$ 0.83914	$ (0.07622)	$ 0.70873	$ 1.47165	8
9	Medium, All Usge		0.37996	$ (0.07622)	$ 0.70873	1.01247	Medium, All Usge		0.45834	$ (0.07622)	$ 0.70873	1.09085	9
10	Large, All Usage		0.29084	$ (0.07622)	$ 0.70873	0.92335	Large-1, All Usage		0.41263	$ (0.07622)	$ 0.70873	1.04514	10
11							Large-2, All Usage		0.28856	$ (0.07622)	$ 0.70873	0.92107	11
12	Transportation Eligible		0.10776	$ (0.07622)	$ 0.70873	0.74027	Transportation Eligible		0.10923	$ (0.07622)	$ 0.70873	0.74174	12
	Demand Charge						Demand Charge						
13	Transportation Eligible		$ 0.062340			$ 0.062340	Transportation Eligible		$ 0.082459			$ 0.082459	13
	Optional Gas Service	G-30					Optional Gas Service	G-30					
14	Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 27.				Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 27.				14
	Delivery Charge per Therm						Delivery Charge per Therm						
15	All Usage		As Specified on A.C.C. Sheet No. 28.				All Usage		As Specified on A.C.C. Sheet No. 28.				15
	Air Conditioning Gas Service	G-40					Air Conditioning Gas Service	G-40					
16	Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 32.				Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 32.				16
	Delivery Charge per Therm						Delivery Charge per Therm						
17	All Usage		$ 0.11010	$ (0.07622)	$ 0.70873	$ 0.74261	All Usage		$ 0.13077	$ (0.07622)	$ 0.70873	$ 0.76328	17
	Street Lighting Gas Service	G-45					Street Lighting Gas Service	G-45					
	Delivery Charge per Therm of Rated Capacity						Delivery Charge per Therm of Rated Capacity						
18	All Usage		$ 0.61050	$ (0.07622)	$ 0.70873	$ 1.24301	All Usage		$ 0.69242	$ (0.07622)	$ 0.70873	$ 1.32493	18

[1] Delivery changes effective December 1, 2008.
[2] Rate Adjustment and Gas Cost effective June 28, 2010.

SOUTHWEST GAS CORPORATION
ARIZONA
RATE SUMMARY AT PRESENT AND SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description (a)	Schedule (b)	Present Rates: Delivery Charge [1] (c)	Present Rates: Rate Adjustment [2] (d)	Present Rates: Gas Cost [2] (e)	Present Rates: Currently Effective Tariff Rate (f)	Description (g)	Schedule (h)	Settlement Rates: Delivery Charge (i)	Settlement Rates: Rate Adjustment [2] (j)	Settlement Rates: Gas Cost [2] (k)	Settlement Rates: Effective Tariff Rate (l)	Line No.
	Gas Service for Compression on Customer's Premises	G-55					Gas Service for Compression on Customer's Premises	G-55					
	Basic Service Charge per Month						Basic Service Charge per Month						
1	Small		$ 27.50			$ 27.50	Small		$ 27.50			$ 27.50	1
2	Large		250.00			250.00	Large		250.00			250.00	2
3	Residential		10.70			10.70	Residential		10.70			10.70	3
	Delivery Charge per Therm						Delivery Charge per Therm						
4	All Usage		$ 0.18678	$ (0.07622)	$ 0.70873	$ 0.81929	All Usage		$ 0.21470	$ (0.07622)	$ 0.70873	$ 0.84721	4
	Electric Generation Gas Service	G-60					Electric Generation Gas Service	G-60					
5	Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 40.				Basic Service Charge per Month		As Specified on A.C.C. Sheet No. 40.				5
	Delivery Charge per Therm						Delivery Charge per Therm						
6	All Usage		$ 0.13535	$ (0.07622)	$ 0.70873	$ 0.76786	All Usage		$ 0.15421	$ (0.07622)	$ 0.70873	$ 0.78672	6
	Small Essential Agriculture User Gas Service	G-75					Small Essential Agriculture User Gas Service	G-75					
7	Basic Service Charge per Month		$ 120.00			$ 120.00	Basic Service Charge per Month		$ 120.00			$ 120.00	7
	Delivery Charge per Therm						Delivery Charge per Therm						
8	All Usage		$ 0.24396	$ (0.07622)	$ 0.70873	$ 0.87647	All Usage		$ 0.28037	$ (0.07622)	$ 0.70873	$ 0.91288	8
	Natural Gas Engine Gas Service	G-80					Natural Gas Engine Gas Service	G-80					
	Basic Service Charge per Month						Basic Service Charge per Month						
9	Off-Peak Season (October - March)		$ 0.00			$ 0.00	Off-Peak Season (October - March)		$ 0.00			$ 0.00	9
10	Peak Season (April - September)		125.00			125.00	Peak Season (April - September)		125.00			125.00	10
	Delivery Charge per Therm						Delivery Charge per Therm						
11	All Usage		$ 0.19069	$ 0.00378	$ 0.50345	$ 0.69792	All Usage		$ 0.22065	$ 0.00378	$ 0.50345	$ 0.72788	11
	Components of Rate Adjustment												
12	Low Income Ratepayer Assistance (LIRA)			$ 0.01222						$ 0.01222			12
13	Demand Side Management			$ 0.00200						$ 0.00200			13
14	Gas Research Fund			$ 0.00103						$ 0.00103			14
15	Department of Transportation			$ 0.00075						$ 0.00075			15
16	Gas Cost Balancing Account Adjustment			$ (0.08000)						$ (0.08000)			16
17	Total			$ (0.06400)						$ (0.06400)			17
18	Total Excluding LIRA			$ (0.07622)						$ (0.07622)			18

[1] Delivery changes effective December 1, 2008.
[2] Rate Adjustment and Gas Cost effective June 28, 2010.

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Proposed Schedule Number	Billing Determinants: Number of Bills	Billing Determinants: Sales (Therms)	Basic Service Charge	Delivery Charge	Revenue at Proposed Rates: Basic Service Charge	Revenue at Proposed Rates: Delivery Charge	Revenue at Proposed Rates: Total Margin	Revenue at Proposed Rates: Gas Cost	Revenue at Proposed Rates: Total Revenue	Revenue at Present Rates	Increase / Decrease: Dollars	Increase / Decrease: Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	Single-Family Residential Gas Service	G-5													
1	Basic Service Charge per Month		10,418,131		$ 10.70		$ 111,474,002		$ 111,474,002		$ 111,474,002	$ 111,474,002	$ 0	0.0%	1
	Delivery Charge per Therm														
2	Sales-All Usage			261,822,441		$ 0.70314		$ 184,097,831	184,097,831	$ 185,561,419	369,659,250	334,983,486	34,675,764	10.4%	2
3	Total Single-Family Residential		10,418,131	261,822,441			$ 111,474,002	$ 184,097,831	$ 295,571,833	$ 185,561,419	$ 481,133,252	$ 446,457,488	$ 34,675,764	7.8%	3
	Multi-Family Residential Gas Service	G-6													
4	Basic Service Charge per Month		378,334		$ 9.70		$ 3,669,840		$ 3,669,840		$ 3,669,840	$ 3,669,840	$ 0	0.0%	4
	Delivery Charge per Therm														
5	Sales-All Usage			5,862,713		$ 0.70314		$ 4,122,308	4,122,308	$ 4,155,081	8,277,389	7,399,682	877,707	11.9%	5
6	Total Multi-Family Residential		378,334	5,862,713			$ 3,669,840	$ 4,122,308	$ 7,792,148	$ 4,155,081	$ 11,947,229	$ 11,069,522	$ 877,707	7.9%	6
	Single-Family Low Income Residential	G-10													
7	Basic Service Charge		415,096		$ 7.50		$ 3,113,220		$ 3,113,220		$ 3,113,220	$ 3,113,220	$ 0	0.0%	7
	Delivery Charge per Therm														
	Summer (May - October)														
8	Sales-All Usage			2,301,968		$ 0.70314		$ 1,618,606	1,618,606	$ 1,631,474	3,250,080	2,905,452	344,628	11.9%	8
	Winter (November - April)														
9	Sales-All Usage			8,193,230		0.70314		5,760,988	5,760,988	5,806,788	11,567,776	10,341,167	1,226,609	11.9%	9
10	Total Single-Family Low Income		415,096	10,495,198			$ 3,113,220	$ 7,379,594	$ 10,492,814	$ 7,438,262	$ 17,931,076	$ 16,359,839	$ 1,571,237	9.6%	10
	Multi-Family Low Income Residential	G-11													
11	Basic Service Charge per Month		37,729		$ 7.50		$ 282,968		$ 282,968		$ 282,968	$ 282,968	$ 0	0.0%	11
	Delivery Charge per Therm														
	Summer (May - October)														
12	Sales-All Usage			210,209		$ 0.70314		$ 147,806	147,806	$ 148,981	296,787	265,317	31,470	11.9%	12
	Winter (November - April)														
13	Sales-All Usage			500,236		0.70314		351,736	351,736	354,532	706,268	631,378	74,890	11.9%	13
14	Total Multi-Family Low Income		37,729	710,445			$ 282,968	$ 499,542	$ 782,510	$ 503,513	$ 1,286,023	$ 1,179,663	$ 106,360	9.0%	14
	Special Residential Gas Service for Air Conditioning	G-15													
15	Basic Service Charge per Month		1,080		$ 10.70		$ 11,556		$ 11,556		$ 11,556	$ 11,556	$ 0	0.0%	15
	Delivery Charge per Therm														
	Summer (May - October)														
16	Sales-First 15 Therms			6,452		$ 0.70314		$ 4,537	4,537	$ 4,573	9,110	8,255	855	10.4%	16
17	Sales-Over 15 Therms			29,531		0.13077		3,862	3,862	20,930	24,792	29,453	(4,661)	-15.8%	17
	Winter (November - April)														
18	Sales-All Usage			53,236		0.70314		37,432	37,432	37,730	75,162	68,112	7,050	10.4%	18
19	Total Special Residential		1,080	89,219			$ 11,556	$ 45,831	$ 57,387	$ 63,233	$ 120,620	$ 117,376	$ 3,244	2.8%	19
20	Total Residential Gas Service		11,250,370	278,980,016			$ 118,551,586	$ 196,145,106	$ 314,696,692	$ 197,721,508	$ 512,418,200	$ 475,183,888	$ 37,234,312	7.8%	20
	Master Metered Mobile Home Park (MMMHP) Gas Service	G-20													
21	Basic Service Charge per Month		1,812		$ 66.00		$ 119,592		$ 119,592		$ 119,592	$ 119,592	$ 0	0.0%	21
	Delivery Charge per Therm														
22	Sales-All Usage			1,823,059		$ 0.47189		$ 860,283	860,283	$ 1,292,057	2,152,340	2,036,412	115,928	5.7%	22
23	Total MMMHP Gas Service		1,812	1,823,059			$ 119,592	$ 860,283	$ 979,875	$ 1,292,057	$ 2,271,932	$ 2,156,004	$ 115,928	5.4%	23

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

Line No.	Description	Proposed Schedule Number	Billing Determinants: Number of Bills	Billing Determinants: Sales (Therms)	Basic Service Charge	Delivery Charge	Revenue at Proposed Rates: Basic Service Charge	Revenue at Proposed Rates: Delivery Charge	Revenue at Proposed Rates: Total Margin	Revenue at Proposed Rates: Gas Cost	Revenue at Proposed Rates: Total Revenue	Revenue at Present Rates	Increase / Decrease: Dollars	Increase / Decrease: Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	General Gas Service - Small	G-25(S)													
	Basic Service Charge per Month														
1	Sales		205,557		$ 27.50		$ 5,652,818		$ 5,652,818		$ 5,652,818	$ 5,652,818	$ 0	0.0%	1
2	Transportation		36		27.50		990		990		990	990	0	0.0%	2
	Delivery Charge per Therm														
3	Sales-All Usage			3,951,454		$ 0.83914		$ 3,315,823	3,315,823	$ 2,800,514	6,116,337	5,055,174	1,061,163	21.0%	3
4	Transportation-All Usage			607		0.83914		509	509	0	509	346	163	47.1%	4
5	Total Small General		205,593	3,952,061			$ 5,653,808	$ 3,316,332	$ 8,970,140	$ 2,800,514	$ 11,770,654	$ 10,709,328	$ 1,061,326	9.9%	5
	General Gas Service - Medium	G-25(M)													
	Basic Service Charge per Month														
6	Sales		181,042		$ 43.50		$ 7,875,327		$ 7,875,327		$ 7,875,327	$ 7,875,327	$ 0	0.0%	6
7	Transportation		348		43.50		15,138		15,138		15,138	15,138	0	0.0%	7
	Delivery Charge per Therm														
8	Sales-All Usage			38,541,245		$ 0.45834		$ 17,664,994	17,664,994	$ 27,315,337	44,980,331	41,959,468	3,020,863	7.2%	8
9	Transportation-All Usage			117,316		0.45834		53,771	53,771	0	53,771	44,575	9,196	20.6%	9
10	Total Medium General		181,390	38,658,561			$ 7,890,465	$ 17,718,765	$ 25,609,230	$ 27,315,337	$ 52,924,567	$ 49,894,508	$ 3,030,059	6.1%	10
	General Gas Service - Large-1	G-25(L1)													
	Basic Service Charge per Month														
11	Sales		83,792		$ 80.00		$ 6,703,360		$ 6,703,360		$ 6,703,360	$ 13,406,720	$(6,703,360)	-50.0%	11
12	Transportation		1,080		80.00		86,400		86,400		86,400	172,800	(86,400)	-50.0%	12
	Delivery Charge per Therm														
13	Sales-All Usage			102,012,194		$ 0.41263		$ 42,093,292	42,093,292	$ 72,299,102	114,392,394	101,968,329	12,424,065	12.2%	13
14	Transportation-All Usage			2,051,536		0.41263		846,525	846,525	0	846,525	596,669	249,856	41.9%	14
15	Total Large General Gas Service		84,872	104,063,730			6,789,760	42,939,817	49,729,577	72,299,102	122,028,679	116,144,518	5,884,161	5.1%	15
	General Gas Service - Large-2	G-25(L2)													
	Basic Service Charge per Month														
16	Sales		4,848		$ 470.00		$ 2,278,560		$ 2,278,560		$ 2,278,560	$ 787,200	$ 1,491,360	189.5%	16
17	Transportation		288		470.00		135,360		135,360		135,360	34,560	100,800	291.7%	17
	Delivery Charge per Therm														
18	Sales-All Usage			33,135,165		$ 0.28856		$ 9,561,483	9,561,483	$ 23,483,885	33,045,368	33,120,916	(75,548)	-0.2%	18
19	Transportation-All Usage			2,735,757		0.28856		789,430	789,430	0	789,430	795,668	(6,238)	-0.8%	19
20	Total Large General Gas Service		5,136	35,870,922			2,413,920	10,350,913	12,764,833	23,483,885	36,248,718	34,738,344	1,510,374	4.3%	20
	General Gas Service - Transportation Eligible (TE)	G-25(TE)													
	Basic Service Charge per Month														
21	Sales		1,308		$ 950.00		$ 1,242,600		$ 1,242,600		$ 1,242,600	$ 1,242,600	$ 0	0.0%	21
22	Transportation		1,020		950.00		969,000		969,000		969,000	969,000	0	0.0%	22
	Demand Charge per Month														
23	Sales			4,702,698	0.082459			$ 4,653,357	4,653,357		4,653,357	3,517,994	1,135,363	32.3%	23
24	Transportation			6,735,792	0.082459			$ 6,665,120	6,665,120		6,665,120	5,038,911	1,626,209	32.3%	24
	Delivery Charge per Therm														
25	Sales-All Usage			36,741,268		$ 0.10923		4,013,249	4,013,249	$ 26,039,639	30,052,888	29,998,878	54,010	0.2%	25
26	Transportation-All Usage			64,605,187		0.10923		7,056,825	7,056,825	0	7,056,825	6,961,855	94,970	1.4%	26
27	Total Transportation Eligible General		2,328	101,346,455			$ 2,211,600	$ 22,388,551	$ 24,600,151	$ 26,039,639	$ 50,639,790	$ 47,729,238	$ 2,910,552	6.1%	27
28	Total General Gas Service		479,319	283,891,729			$ 24,959,553	$ 96,714,378	$ 121,673,931	$ 151,938,477	$ 273,612,408	$ 259,215,936	$ 14,396,472	5.6%	28

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

			Billing Determinants		Revenue at Proposed Rates										
Line No.	Description	Proposed Schedule Number	Number of Bills	Sales (Therms)	Basic Service Charge	Delivery Charge	Basic Service Charge	Delivery Charge	Total Margin	Gas Cost	Total Revenue	Revenue at Present Rates	Increase / Decrease Dollars	Increase / Decrease Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	Air Conditioning Gas Service	G-40													
	Basic Service Charge per Month														
1	Sales - With Other Service - No BSC		36		$ 0.00		$ 0		$ 0		$ 0	$ 0	$ 0	0.0%	1
2	Sales-General Service - Small		184		27.50		5,060		5,060		5,060	$ 5,060	0	0.0%	2
3	Sales-General Service - Medium		0		43.50		0		0		0	$ 0	0	0.0%	3
4	Sales-General Service - Large 1		24		80.00		1,920		1,920		1,920	$ 3,840	(1,920)	-50.0%	4
5	Sales-Essential Agricultural		36		120.00		4,320		4,320		4,320	$ 4,320	0	0.0%	5
6	Transportation - With Other Service - No BSC		12		0.00		0		0		0	$ 0	0	0.0%	6
	Delivery Charge per Therm														
7	Sales-All Usage			359,940		$ 0.13077		$ 47,069	47,069	$ 255,100	302,169	294,729	7,440	2.5%	7
8	Transportation-Usage			266,305		0.13077		34,825	34,825	0	34,825	29,320	5,505	18.8%	8
9	Total Air Conditioning		292	626,245			$ 11,300	$ 81,894	$ 93,194	$ 255,100	$ 348,294	$ 337,269	$ 11,025	3.3%	9
	Street Lighting Gas Service	G-45													
	Delivery Charge per Therm														
10	All Usage		180	87,447		$ 0.69242		$ 60,550	$ 60,550	$ 61,976	$ 122,526	$ 115,362	$ 7,164	6.2%	10
11	Total Street Lighting Gas Service		180	87,447			$ 0	$ 60,550	$ 60,550	$ 61,976	$ 122,526	$ 115,362	$ 7,164	6.2%	11
	Gas Service for Compression on Customer's Premises	G-55													
	Basic Service Charge per Month														
12	Sales-Small		192		$ 27.50		$ 5,280		$ 5,280		$ 5,280	$ 5,280	$ 0	0.0%	12
13	Sales-Large		240		250.00		60,000		60,000		60,000	$ 60,000	0	0.0%	13
14	Sales-Residential		984		10.70		10,529		10,529		10,529	$ 10,529	0	0.0%	14
15	Transportation-Large		48		250.00		12,000		12,000		12,000	$ 12,000	0	0.0%	15
	Delivery Charge per Therm														
16	Sales-Small			101,442		$ 0.21470		$ 21,780	21,780	$ 71,895	93,675	90,842	2,833	3.1%	16
17	Sales-Large			1,244,594		0.21470		267,214	267,214	882,081	1,149,295	1,114,546	34,749	3.1%	17
18	Sales-Residential			35,148		0.21470		7,546	7,546	24,910	32,456	31,475	981	3.1%	18
19	Transportation-Large			2,751,372		0.21470		590,720	590,720	0	590,720	513,901	76,819	14.9%	19
20	Total CNG		1,464	4,132,556			$ 87,809	$ 887,260	$ 975,069	$ 978,886	$ 1,953,955	$ 1,838,573	$ 115,382	6.3%	20
	Electric Generation Gas Service	G-60													
	Basic Service Charge per Month														
21	Sales-General Service - Small		36		$ 27.50		$ 990		$ 990		$ 990	$ 990	$ 0	0.0%	21
22	Sales-General Service - Medium		24		43.50		1,044		1,044		1,044	$ 1,044	0	0.0%	22
23	Sales-General Service - Large-1		36		80.00		2,880		2,880		2,880	$ 5,760	(2,880)	-50.0%	23
24	Sales-General Service - TE		12		950.00		11,400		11,400		11,400	$ 11,400	0	0.0%	24
25	Sales-Essential Agricultural		12		120.00		1,440		1,440		1,440	$ 1,440	0	0.0%	25
26	Transportation - General Service - Small		24		27.50		660		660		660	$ 660	0	0.0%	26
27	Transportation - General Service - TE		72		950.00		68,400		68,400		68,400	$ 68,400	0	0.0%	27
	Delivery Charge per Therm														
28	Sales-All Usage			1,235,925		$ 0.15421		$ 190,592	190,592	$ 875,937	1,066,529	1,043,219	23,310	2.2%	28
29	Transportation-All Usage			20,137,894		0.15421		3,105,465	3,105,465	0	3,105,465	2,725,664	379,801	13.9%	29
30	Total Electric Generation		216	21,373,819			$ 86,814	$ 3,296,057	$ 3,382,871	$ 875,937	$ 4,258,808	$ 3,858,577	$ 400,231	10.4%	30

SOUTHWEST GAS CORPORATION
ARIZONA
SUMMARY OF PRESENT AND SETTLEMENT REVENUES BY RATE COMPONENT - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010

			Billing Determinants		Revenue at Proposed Rates								Increase / Decrease		
Line No.	Description	Proposed Schedule Number	Number of Bills	Sales (Therms)	Basic Service Charge	Delivery Charge	Basic Service Charge	Delivery Charge	Total Margin	Gas Cost	Total Revenue	Revenue at Present Rates	Dollars	Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
	Sm. Essential Agriculture User Gas Service	G-75													
	Basic Service Charge per Month														
1	Sales		587		$ 120.00		$ 70,440		$ 70,440		$ 70,440	$ 70,440	$ 0	0.0%	1
2	Transportation		24		120.00		2,880		2,880		2,880	$ 2,880	0	0.0%	2
	Delivery Charge per Therm														
3	Sales-All Usage			2,647,768		$ 0.28037		$ 742,355	742,355	$ 1,876,553	2,618,908	2,522,502	96,406	3.8%	3
4	Transportation-All Usage			32,852		0.28037		9,211	9,211	0	9,211	8,015	1,196	14.9%	4
5	Total Small Essential Agricultural		611	2,680,620			$ 73,320	$ 751,566	$ 824,886	$ 1,876,553	$ 2,701,439	$ 2,603,837	$ 97,602	3.7%	5
	Natural Gas Engine Gas Service	G-80													
	Basic Service Charge per Month														
6	Sales-Off-Peak Season		1,951		$ 0.00		$ 0		$ 0		$ 0	$ 0	$ 0	0.0%	6
7	Sales-Peak Season		1,951		125.00		243,813		243,813		243,813	243,813	0	0.0%	7
8	Transportation-Off-Peak Season		48		0.00		0		0		0	-	0	0.0%	8
9	Transportation-Peak Season		48		125.00		6,000		6,000		6,000	6,000	0	0.0%	9
	Delivery Charge per Therm														
10	Sales-All Usage			7,272,353		$ 0.22065		$ 1,604,645	1,604,645	$ 3,661,266	5,265,911	5,048,031	217,880	4.3%	10
11	Transportation-All Usage			405,928		0.22065		89,568	89,568	0	89,568	77,406	12,162	15.7%	11
12	Total Natural Gas Engine		3,997	7,678,281			$ 249,813	$ 1,694,213	$ 1,944,026	$ 3,661,266	$ 5,605,292	$ 5,375,250	$ 230,042	4.3%	12
13	Total Tariff Sales		11,738,261	601,273,772			144,139,787	300,491,307	444,631,094	358,661,760	803,292,854	750,684,696	52,608,158	7.0%	13
14	Optional Gas Service	G-30	432	41,631,695					$ 4,024,536	$ 20,497,955	$ 24,522,491	$ 24,522,491	$ 0	0.0%	14
15	Special Contract Service	B-1	209	35,199,807					$ 2,763,591		$ 2,763,591	$ 2,763,591	$ 0	0.0%	15
16	Other Operating Revenues						$ 12,096,356		$ 12,096,356		$ 12,096,356	$ 12,096,356	$ 0	0.0%	16
17	Total		11,738,902	678,105,274			$ 156,236,143	$ 300,491,307	$ 463,515,577	$ 379,159,715	$ 842,675,292	$ 790,067,134	$ 52,608,158	6.66%	17
18	Total Revenue Requirement								463,514,833						18
19	Over/(Under)								$ 744						19

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
SINGLE-FAMILY RESIDENTIAL GAS SERVICE

Line No.	Description	Monthly Consumption (Therms)	Monthly Bill At Currently Effective Rates	Monthly Bill At Proposed Tariff Rates	Increase/(Decrease) Dollars	Increase/(Decrease) Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
	Summer Season Bills						
1	75 Percent Average Use	8	$ 20.42	$ 21.48	$ 1.06	5.19%	1
2	Average Summer Use	11	24.07	25.53	1.46	6.07%	2
3	125 Percent Average Use	14	27.72	29.57	1.85	6.67%	3
	Winter Season Bills						
4	75 Percent Average Use	29	$ 45.95	$ 49.79	$ 3.84	8.36%	4
5	Average Winter Use	39	58.10	63.27	5.17	8.90%	5
6	125 Percent Average Use	49	70.26	76.75	6.49	9.24%	6

Effective Tariff Rates [1]	Amount	Delivery Charge	Rate Adjustment	Gas Cost
Basic Service Charge per Month	$ 10.70			
Commodity Charge				
All Usage	$ 1.21543	$ 0.57070	$ (0.06400)	$0.70873
Settlement Rates				
Basic Service Charge per Month	$ 10.70			
Commodity Charge				
All Usage	$ 1.34787	$ 0.70314	$ (0.06400)	$0.70873

[1] Rates effective June 28, 2010 including all adjustments.

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
MULTI-FAMILY RESIDENTIAL GAS SERVICE

Line No.	Description	Monthly Consumption (Therms)	Monthly Bill: At Currently Effective Rates	Monthly Bill: At Proposed Tariff Rates	Increase/(Decrease): Dollars	Increase/(Decrease): Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
	Summer Season Bills						
1	75 Percent Average Use	8	$ 19.29	$ 20.48	$ 1.19	6.17%	1
2	Average Summer Use	10	21.68	23.18	1.50	6.92%	2
3	125 Percent Average Use	13	25.28	27.22	1.94	7.67%	3
	Winter Season Bills						
4	75 Percent Average Use	16	$ 28.87	$ 31.27	$ 2.40	8.31%	4
5	Average Winter Use	21	34.86	38.01	3.15	9.04%	5
6	125 Percent Average Use	26	40.85	44.74	3.89	9.52%	6

Effective Tariff Rates [1]	Amount	Delivery Charge	Rate Adjustment	Gas Cost
Basic Service Charge per Month	$ 9.70			
Commodity Charge				
All Usage	$ 1.19816	$ 0.55343	$ (0.06400)	$0.70873
Settlement Rates				
Basic Service Charge per Month	$ 9.70			
Commodity Charge				
All Usage	$ 1.34787	$ 0.70314	$ (0.06400)	$0.70873

[1] Rates effective June 28, 2010 including all adjustments.

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
SINGLE-FAMILY LOW-INCOME RESIDENTIAL GAS SERVICE

Line No.	Description	Monthly Consumption (Therms)	Monthly Bill At Currently Effective Rates	Monthly Bill At Proposed Tariff Rates	Increase/(Decrease) Dollars	Increase/(Decrease) Percent	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	
	Summer Season Bills						
1	75 Percent Average Use	8	$ 16.99	$ 18.19	$ 1.20	7.06%	1
2	Average Summer Use	11	20.55	22.19	1.64	7.98%	2
3	125 Percent Average Use	14	24.10	26.20	2.10	8.71%	3
	Winter Season Bills						
4	75 Percent Average Use	29	$ 35.01	$ 34.61	$ (0.40)	(1.14%)	4
5	Average Winter Use	39	44.50	43.96	(0.54)	(1.21%)	5
6	125 Percent Average Use	49	53.99	53.31	(0.68)	(1.26%)	6

Effective Tariff Rates [1]	Amount	Delivery Charge	Rate Adjustment	Gas Cost
Basic Service Charge per Month	$ 7.50			
Commodity Charge Summer				
All Usage	1.18594	$ 0.55343	$ (0.07622)	$0.70873
Commodity Charge Winter				
First 150 Therms	$ 0.94875	$ 0.31624	$ (0.07622)	$0.70873
Over 150 Therms	1.18594	0.55343	(0.07622)	0.70873
Settlement Rates				
Basic Service Charge per Month	$ 7.50			
Commodity Charge Summer				
All Usage	$ 1.33565	$ 0.70314	$ (0.07622)	$0.70873
Commodity Charge Winter				
First 150 therms	$ 0.93496	$ 0.30245	$ (0.07622)	$0.70873
Over 150 therms	1.33565	0.70314	(0.07622)	0.70873

[1] Rates effective June 28, 2010 including all adjustments.

SOUTHWEST GAS CORPORATION
ARIZONA
TYPICAL BILL COMPARISON SETTLEMENT RATES - ALTERNATIVE B
FOR TWELVE-MONTHS ENDED JUNE 30, 2010
MULTIFAMILY LOW-INCOME RESIDENTIAL GAS SERVICE

Line No.	Description	Monthly Consumption (Therms)		At Currently Effective Rates		At Proposed Tariff Rates	Increase/(Decrease)			Line No.
							Dollars		Percent	
	(a)	(b)		(c)		(d)		(e)	(f)	
	Summer Season Bills									
1	75 Percent Average Use	8	$	16.99	$	18.19	$	1.20	7.06%	1
2	Average Summer Use	11		20.55		22.19		1.64	7.98%	2
3	125 Percent Average Use	14		24.10		26.20		2.10	8.71%	3
	Winter Season Bills									
4	75 Percent Average Use	20	$	26.48	$	26.20	$	(0.28)	(1.06%)	4
5	Average Winter Use	26		32.17		31.81		(0.36)	(1.12%)	5
6	125 Percent Average Use	33		38.81		38.35		(0.46)	(1.19%)	6

		Amount		Delivery Charge		Rate Adjustment	Gas Cost
Effective Tariff Rates [1]	$	7.50					
Basic Service Charge per Month							
Commodity Charge Summer	$	1.18594	$	0.55343	$	(0.07622)	$0.70873
All Usage							
Commodity Charge Winter	$	0.94875	$	0.31624	$	(0.07622)	$0.70873
First 150 Therms		1.18594		0.55343		(0.07622)	0.70873
Over 150 Therms							
Settlement Rates	$	7.50					
Commodity Charge Summer							
All Usage	$	1.33565	$	0.70314	$	(0.07622)	$0.70873
Commodity Charge Winter							
First 150 therms	$	0.93496	$	0.30245	$	(0.07622)	$0.70873
Over 150 therms		1.33565		0.70314		(0.07622)	0.70873

[1] Rates effective June 28, 2010 including all adjustments.

EXHIBIT
A-16

ORIGINAL

SOUTHWEST GAS CORPORATION

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July 28, 2011

Arizona Corporation Commission
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JUL 29 2011
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Docket Control Office
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007-2996

Subject: Docket No. G-01551A-10-0458
Southwest Gas Corporation - General Rate Case
Testimony in Support of Proposed Settlement Agreement

Southwest Gas Corporation hereby submits an original and 13 copies of the Prepared Direct Testimony of John P. Hester in Support of the Proposed Settlement Agreement filed with the Arizona Corporation Commission on July 15, 2011, in the above-referenced proceeding,

Should you have any questions, please do not hesitate to contact me at (702) 876-7163.

Respectfully submitted,

Debra S. Gallo by amz

Debra S. Gallo, Director
Government & State Regulatory Affairs

5241 Spring Mountain Road / Las Vegas, Nevada 89150-0002
P.O. Box 98510 / Las Vegas, Nevada 89193-8510 / (702) 876-7011
www.swgas.com

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
Docket No. G-01551A-10-0458

PREPARED DIRECT TESTIMONY
IN SUPPORT OF THE PROPOSED SETTLEMENT AGREEMENT
OF
JOHN P. HESTER

ON BEHALF OF
SOUTHWEST GAS CORPORATION

July 29, 2011

Table of Contents
of
Prepared Direct Testimony
in Support of the Proposed Settlement Agreement
of
John P. Hester

BEFORE THE ARIZONA CORPORATION COMMISSION

Prepared Direct Testimony
in Support of the Proposed Settlement Agreement
of
John P. Hester

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is John P. Hester. My business address is 5241 Spring Mountain Road, Las Vegas, Nevada 89150.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or the Company) as Senior Vice President/Regulatory Affairs and Energy Resources.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously testified before the Arizona Corporation Commission (Commission), the Public Utilities Commission of Nevada, the California Public Utilities Commission, and the Illinois Commerce Commission.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I am sponsoring testimony in support of the proposed settlement agreement filed with the Commission July 15, 2011 (Settlement Agreement). The Settlement Agreement resolves all issues arising from the Company's November 12, 2010 general rate case application (Application) and was entered into by and among Southwest Gas, the Arizona Corporation Commission's Utilities Division Staff

(Staff), the Arizona Investment Council (AIC), the Southwest Energy Efficiency Project (SWEEP), the Natural Resources Defense Council (NRDC), and Cynthia Zwick (collectively, the Settlement Parties).

Q. 6 Please summarize your prepared direct testimony.

A. 6 My prepared direct testimony consists of the following key areas:

- An overview and summary of the settlement process and negotiations.
- An overview of Alternative A and Alternative B.
- An explanation of the various enhancements to low income programs.
- An overview of the agreed upon cost of capital and rate base amounts.
- An explanation of treatment of the Company's proposed Energy Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan (EE and RET Plan).
- An explanation of the customer-owned yard line (COYL) replacement program.
- A summary of the agreed upon rate design and revenue allocation.
- An explanation of other miscellaneous settlement terms and tariff changes.

II. THE SETTLEMENT PROCESS AND NEGOTIATIONS

Q. 7 Did you participate in the settlement negotiations?

A. 7 Yes. In addition to Southwest Gas, the other settlement participants included Staff, the Residential Utility Consumer Office (RUCO); Tucson Electric Power Company (TEP), Cynthia Zwick, AIC, SWEEP, and the NRDC (collectively referred to as the Parties to this Docket). All Parties to this Docket chose to become signatories to the Settlement Agreement, with the exception of RUCO and TEP.

Q. 8 Please provide a brief summary of the chronology of events leading up to the settlement negotiations.

A. 8 On November 12, 2010, Southwest Gas filed an application requesting approval of: (i) a general rate increase for its Arizona rate jurisdiction; (ii) its proposed Energy Efficiency Enabling Provision; (iii) its proposed EE and RET Plan and corresponding budget; (iv) its proposed COYL pilot program, inclusive of a deferred accounting order; (v) a deferred accounting order for the costs associated with replacement of Aldyl HD pipe as part of the Company's 20-year plan to replace all early vintage plastic pipe (EVPP); and (vi) various proposed amendments to its Arizona gas tariff.

RUCO, TEP, Cynthia Zwick, AIC, SWEEP, and NRDC requested to intervene and each of their requests was granted. Staff, RUCO, and Cynthia Zwick filed direct testimony June 10, 2011. Staff, RUCO, NRDC, and SWEEP filed direct rate design testimony June 24, 2011. Southwest Gas filed a Notice of Settlement Discussions on June 21, 2011. The Parties to this Docket subsequently held settlement discussions beginning June 28, 2011 and continuing through July 14, 2011.

Q. 9 How was the settlement process conducted?

A. 9 All Parties to this Docket were notified of settlement meetings. Each settlement meeting was available telephonically through a dial-in number if interested parties were unable to attend in person. To the extent practicable, accommodations were made in the scheduling for those parties who expressed meeting conflicts and indicated a desire for such accommodation. The negotiations were inclusive of all interested Parties to this Docket – even those who indicated they would likely not be signatories to the Settlement Agreement. The provisions of the Settlement Agreement reflect the input of all the Parties to this Docket, resulting in a thorough analysis, discussion and resolution of issues. Settlement negotiation participants were provided with either electronic or hard copies of all documents presented during discussions. To encourage openness and transparency, the parties agreed that the content of settlement discussions would be confidential, as they generally are in civil litigation under Arizona's Rules of Civil Procedure and Evidence.

Q. 10 Please summarize your perspective of the settlement negotiations and the resulting Settlement Agreement.

A. 10 The settlement discussions were open, transparent, and inclusive of all Parties to this Docket. As is the nature of all settlement negotiations and resulting compromises, no one party received everything they wanted and instead the Settlement Parties agreed upon a compromise that when viewed as a complete package was in the best interest of each and every party. Southwest Gas believes the Settlement Agreement results in a balanced and complete package that addresses its need for a rate increase with the continuation of safe and reliable service to customers at just and reasonable rates and charges. In addition, Southwest Gas believes the Settlement Agreement results in several specific customer benefits that would not otherwise have been accomplished through a litigated proceeding.

Southwest Gas commends all the Parties to this Docket, especially the Settlement Parties, for their willingness to come together and reach solutions that are fair, just and reasonable, and that are in the public interest.

III. REVENUE DECOUPLING - ALTERNATIVE A AND ALTERNATIVE B

Q. 11 Please explain the Settlement Agreement's resolution of the Company's revenue decoupling proposal.

A. 11 The Settlement Parties agreed that revenue decoupling should be implemented, but wanted to provide the Commission an opportunity to select the decoupling methodology it prefers. Therefore, the Settlement Agreement includes two alternatives – Alternative A and Alternative B. However, in addition to each specific decoupling methodology, the Settlement Parties carefully crafted other key terms and conditions to accompany the selection of each alternative. Accordingly, the Settlement Parties respectfully request the Commission select one Alternative in its entirety as part of this Settlement Agreement.

Q. 12 Please briefly explain Alternative A.

A. 12 Alternative A consists of a partial revenue decoupling methodology, an overall revenue increase of $54.9 million, a return on common equity capital of 9.75 percent, and a FVROR of 7.02 percent of fair value rate base (FVRB).

Q. 13 Please explain the proposed partial revenue decoupling methodology.

A. 13 Should the Commission select Alternative A, the Company will implement a partial revenue decoupling methodology consisting of two components - a Lost Fixed Cost Recovery (LFCR) component and a weather component. The partial revenue decoupling methodology permits Southwest Gas to recover lost base revenues attributable to achievement of the Commission's required annual energy savings targets and to adjust customer bills each month during the winter season when actual weather during the billing cycle differs from the average weather used in the calculation of rates. The LFCR component permits the Company to recover, through a per unit surcharge the total amount of the anticipated lost base revenues, assuming it achieves 100 percent of the Commission's required annual energy savings. This amount will be adjusted to reflect actual lost base revenue due to energy efficiency during an annual reconciliation process each April. For instance, if the Commission selects Alternative A, the initial LFCR surcharge will be set at $0.00213 per therm, beginning when rates under this Settlement Agreement become effective. This surcharge amount is based on the Commission's 2011 energy efficiency savings targets and the anticipated lost base revenue associated with achieving those targets.

Q. 14 What if the Company does not achieve the Commission's required annual energy savings target for that year, or exceeds the required annual energy savings target?

A. 14 If the Company does not meet 100 percent of the Commission's required annual energy savings target, the difference between the 100 percent it was allowed to collect and the actual lost revenue will be refunded to customers during the next annual reconciliation process. If the Company exceeds its energy efficiency goals in any reconciliation period, the Company will be permitted to recover in the following year the difference between the 100 percent collected from customers and the actual amount of the lost-base revenues associated with attaining energy savings greater than 100 percent of the year's goal.

Q. 15 Please explain the weather component.

A. 15 The weather-related component will be incorporated through a monthly true-up to winter bills (November through April). When actual weather during the billing cycle differs from the average weather used in the calculation of rates there will be either an upward or downward adjustment to the customers' bills. In the event of an extreme cold weather event, customers will receive an immediate real-time benefit as there will be a downward adjustment to their bill.

Q. 16 What other terms and conditions did the Settlement Parties agree upon for Alternative A?

A. 16 The Settlement Parties crafted and negotiated several special terms and conditions unique to the Commission's selection of Alternative A. Some of the key provisions include the following:

- **Reporting Requirement.** Southwest Gas shall make an annual filing, starting April 2013, to permit the Commission and all Parties to this Docket an opportunity to review the performance of the LFCR mechanism and to allow the Company an opportunity to reset the surcharge to recover the lost-base revenues attributable to its achievement of the Commission's required annual energy savings.
- **Communication Plan.** Southwest Gas is required to submit to Staff a proposed customer outreach/education plan outlining how the Company intends to explain the Alternative A decoupling methodology to customers.

Q. 17 Please briefly explain Alternative B.

A. 17 Alternative B consists of a full revenue decoupling methodology, an overall revenue increase of $52.6 million, a return on common equity capital of 9.50 percent and a FVROR of 6.92 percent on FVRB.

Q. 18 Please explain the proposed full revenue decoupling methodology.

A. 18 Should the Commission select Alternative B, the Company will implement a full revenue decoupling methodology whereby rates will adjust to reflect any differences between authorized revenues per customer and actual revenues per customer - as proposed by the Company in its Application. Similar to Alternative A, this methodology also includes a monthly weather component during the winter months and an annual non-weather component.

Q. 19 Please explain the weather component.

A. 19 The weather-related component is identical to the weather-related component in Alternative A – a monthly true-up to winter bills reflecting differences between actual weather during the billing cycle and average weather used in the calculation of rates. Accordingly, in the event of an extreme cold weather event, customers will receive an immediate real-time benefit as there will be a downward adjustment to their bill.

Q. 20 Please explain the annual true-up component.

A. 20 The annual true-up will reconcile any differences between the non-gas revenues authorized by the Commission and the actual non-gas revenues experienced by Southwest Gas. Accordingly, each year the Company will multiply the total number of customers billed for service during each month by the Commission-authorized monthly revenue per customer, and then it will compare that to the actual billed non-gas revenue for the month and account for any differences, both positive and negative, in a deferral account. At the end of each year, a per-therm rate adjustment will be computed by dividing the balance in the deferred account by the previous 12 months sales volume for the affected rate schedules. The resulting rate will remain in effect for a 12-month period to refund or collect the deferred account balance.

Q. 21 What other terms and conditions are included with Alternative B?

A. 21 Similar to Alternative A, the Settlement Parties crafted and negotiated several special terms and conditions unique to the Commission's selection of Alternative B.

- **Reporting Requirement.** Southwest Gas shall file quarterly and annual reports to permit the Commission an opportunity to review the performance of the decoupling mechanism. The quarterly reports will be filed each April, July, October and January, with the first quarterly report being filed no later than April 30, 2012. The annual reporting requirement will consist of both a review of the performance of the full revenue decoupling mechanism, and also an annual earnings test.
- **Earnings Test.** To the extent that recovery would increase earnings such that the Company would be earning more than its authorized return on equity (ROE), the Company will be prohibited from recovering any decoupling deferral amounts in excess of its authorized ROE. The Company's annual reporting requirement shall commence April 2013 and shall be the subject of an Open Meeting for the Commissioners to deliberate the performance of the full revenue decoupling mechanism.
- **Cap on Upward Adjustments.** An additional customer protection is that any upward adjustments in rates resulting from the full revenue decoupling mechanism will be capped each year. Accordingly, each year any increase in non-gas revenue that is to be collected through the annual adjustment component of the decoupling mechanism that is greater than 5 percent of the authorized (or test-year) non-gas base revenue per customer will be capped at 5 percent. Any amounts that are unrecovered due to the cap will be carried forward to future years for recovery. There will be no cap on annual surcharge decreases.

- **Rate Case Moratorium**. The Settlement Parties also negotiated a general rate case moratorium to accompany Alternative B. With the selection of Alternative B, Southwest Gas shall be prohibited from filing a general rate case application prior to April 30, 2016 with a test year no earlier than November 30, 2015 as long as the Commission does not suspend, terminate, or materially modify the decoupling mechanism between rate cases.
- **Communication Plan**. Similar to Alternative A, Southwest Gas will also submit a proposed customer outreach/education plan to Staff outlining how the Company intends to explain decoupling to customers.

Q. 22 Does Southwest Gas prefer Alternative A or Alternative B?

A. 22 As part of the negotiations, Southwest Gas agreed to support the inclusion of both Alternative A and Alternative B in their entirety as part of this Settlement Agreement. However, Southwest Gas strongly supports Alternative B as the Company believes it is a superior decoupling methodology and is more consistent with the Commission's recently approved Policy Statement Regarding Utility Disincentives to Energy Efficiency and Decouple Rate Structures. In addition, Southwest Gas believes Alternative B provides an increased number of customer protections that are inherent to full revenue decoupling, as opposed to partial revenue decoupling.

Q. 23 Please explain why Southwest Gas believes Alternative B is a superior methodology.

A. 23 First and foremost, unlike Alternative A, Alternative B is consistent with the Commission's recently signed policy statement that resulted from numerous workshops and analysis regarding utility disincentives and revenue decoupling. As noted in the Policy Statement and at the workshops and hearings leading to its approval, full revenue decoupling is the preferred methodology. Some of the reasons why it is the preferred methodology include:

- Prevents utility profit from increased sales.

- Ensures customers pay no more than Commission-authorized costs.
- Enhances utility focus on cost control.
- Protects customers from high winter bills following an extreme weather event.
- Does not result in additional complex contested proceedings.
- Decreases frequency of general rate cases.
- Commission approval is growing nationwide.
- Allows both upward and downward rate adjustments.
- Addresses long-term chronic decline in gas utility customer usage.
- Retains immediate permanent customer savings on commodity costs.

Q. 24 Please explain why Southwest Gas believes the Commission's selection of either Alternative A or Alternative B results in rates, charges, and conditions of service that are just and reasonable and in the public interest.

A. 24 While each alternative contains specifically negotiated special terms and conditions unique to each alternative, the following table provides a comparison of the various revenue requirement increases and ROE proposals compared with those contained in the Settlement Agreement and with the selection of either Alternative A or Alternative B.

	Proposed Revenue Increase	**Proposed ROE**	**Overall Average Rate Increase (%)**
Company Direct	$73.2 M	11.00%	9.26%
Staff Direct	$54.9 M	9.75%	6.95%
Settlement - Alternative A	$54.9 M	9.75%	6.95%
Settlement - Alternative B	$52.6 M	9.50%	6.66%

As reflected in the table above, irrespective of the Commission's selection of Alternative A or Alternative B, the result falls within the range or even below the range of the Settlement Parties' recommended revenue increase and ROE.

IV. LOW INCOME PROGRAMS

Q. 25 Please describe how the Settlement Agreement will affect Southwest Gas' low-income customers.

A. 25 The Settlement Agreement mitigates the bill impact on low income customers by increasing the Low-Income Rate Assistance (LIRA) discount to 30 percent from the current 20 percent for the first 150 therms in the winter months (November through April). Depending upon the alternative selected by the Commission, low-income customers will experience an average monthly bill increase of either $0.70 (Alternative A) or $0.59 (Alternative B). As stated earlier, Southwest Gas prefers Alternative B, which also happens to be the better result for low-income customers in term of bill impact. The Settlement Parties also agreed to hold the low income rate schedules harmless from any rate increase associated with the COYL program and the COYL cost recovery mechanism and any increases in the demand side management adjustor mechanism. In addition to these bill impact mitigation provisions, the Settlement Parties agreed to other enhancements related to the Company's LIEC program.

Q. 26 Please explain the enhancements to the LIEC program.

A. 26 Southwest Gas has agreed to increase the funding level for the weatherization component of the LIEC program by committing to make non-ratepayer funded contributions to the program each year for the next 5 years. This commitment results in a total contribution over the 5-year period of at least $1 million. In addition, the Settlement Parties have agreed to meet within 45 days of the effective date of an order approving the Settlement Agreement to develop a plan to enhance customer education and outreach for its LIEC weatherization program.

Q. 27 Why does Southwest Gas believe the result of the Settlement Agreement benefits low-income customers?

A. 27 Absent the parties entering into the Settlement Agreement, it is highly unlikely the commitments that have been made by the Settlement Parties would have made their way into a Commission decision following a litigated proceeding. Most, if not all, of the commitments that have been negotiated by the Settlement Parties were outside the scope of the Settlement Parties' filed positions and would not normally be addressed during a traditional litigated proceeding. Instead, they are the result of concessions and commitments that arise outside the normal ratemaking process and typically only appear in negotiated settlements.

V. COST OF CAPITAL AND RATE BASE

Q. 28 Please explain the Settlement Parties' agreement regarding the Company's cost of capital.

A. 28 The Settlement Agreement results in a capital structure utilizing the Company's actual test period capital structure and cost of debt, consisting of 47.70 percent long-term debt and 52.30 percent common equity, and an embedded cost of long-term debt of 8.34 percent. The Settlement Parties further negotiated an ROE for each alternative – 9.75 percent if the Commission selects Alternative A or 9.50 percent if the Commission selects Alternative B.

Q. 29 How does the Settlement Parties' agreement on these cost of capital components compare to the Settlement Parties' filed positions?

A. 29 As noted in the table below, the agreed upon capital structure, embedded cost of long term debt and ROE are reasonable in relation to the Settlement Parties' recommendations in their direct testimony.

	Proposed Capital Structure (Debt/Equity)	Proposed Cost of Debt	Proposed ROE
Company Direct	47.70/52.30	8.34	11.00%
Staff Direct	47.70/52.30	8.34	9.75%
Settlement - Alternative A	47.70/52.30	8.34	9.75%
Settlement - Alternative B	47.70/52.30	8.34	9.50%

Also, when compared to the average authorized amounts for gas utilities as reported by the American Gas Association (AGA)[1], the reasonableness of the Settlement Parties' agreed upon capital structure and ROE is confirmed.

	Proposed Capital Structure (Equity Component)	Proposed ROE
AGA Average Authorized 2011	52.82%	10.12%
Settlement - Alternative A	52.30%	9.75%
Settlement - Alternative B	52.30%	9.50%

Q. 30 What were the various rate base amounts agreed upon by the Settlement Parties?

A. 30 For the test year ending June 30, 2010, the Settlement Parties agreed upon the following: (i) an original cost rate base (OCRB) of $1,070,115,558; (ii) a reconstruction cost new depreciated (RCND) rate base of $1,835,749,225; and (iii) a fair value of Southwest Gas' jurisdictional rate base of $1,452,932,391.

[1] American Gas Association Rate Case Database.

Q. 31 How do the various rate base amounts agreed upon by the Settlement Parties compare to the rate base amounts included in the Settlement Parties' filed testimony?

A. 31 The Settlement Parties have agreed upon OCRB, RCND, and FVRB amounts that were supported and recommend by Staff in its prepared direct testimony. A comparison of the various rate base amounts are set forth in the table below.

	Proposed OCRB	**Proposed RCND**	**Proposed FVRB**
Company	$1,073,700,633	$1,839,334,300	$1,456,517,468
Staff	$1,070,115,558	$1,835,749,225	$1,452,932,391
Settlement Agreement	$1,070,115,558	$1,835,749,225	$1,452,932,391

VI. ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE TECHNOLOGY PORTFOLIO IMPLEMENTATION PLAN

Q. 32 Please explain the Settlement Parties' agreement regarding the Company's proposed EE and RET Plan.

A. 32 Southwest Gas included in its Application an EE and RET Plan designed to achieve the first year energy savings goals set forth in the Commission's recently approved Gas Utility Energy Efficiency Standards (Gas EE Rules). The Settlement Agreement reflects the result of the Settlement Parties' agreement to work together to pursue prompt implementation of all EE measures that can easily be verified to demonstrate cost effectiveness coincident with the Commission's vote on this Settlement Agreement. This is anticipated to result in an incremental improvement of EE that exceeds the Company's currently-approved portfolio budget of $4.4 million, and that results in customer annual energy savings of at least 1,250,000 therms within nine months of Commission approval of these cost effective measures – this is referred to in the Settlement Agreement as the modified EE and RET Plan.

In addition, since the energy savings proposed in the modified EE and RET Plan may not be sufficient to meet the 2011 energy savings goals that are being agreed to as part of the Settlement Agreement, the Settlement Parties further agreed to have Southwest Gas file a new and revised EE and RET Implementation Plan within 60 days of filing the Settlement Agreement in a new docket setting forth a plan for how it proposes to increase the customer annual energy savings to comply with the energy savings goals set forth in the Gas EE Rules.

VII. COYL REPLACEMENT PROGRAM

Q. 33 What is a COYL?

A. 33 COYL is an acronym for "customer-owned yard line". A COYL is a pipe that typically begins from a point of delivery connection at the outlet of the Company's meter at the property line or public right-of-way, and extends underground from the meter to the house, building or gas utilization equipment where gas is consumed. Since Southwest Gas does not own this piping, the customer is solely responsible for inspecting and maintaining that yard line.

Q. 34 Please explain the agreement among the Settlement Parties regarding the Company's proposed COYL program.

A. 34 The Settlement Parties agreed that Southwest Gas will purchase, field test and validate the effectiveness of 4 Remote Methane Leak Detection (RMLD) units, and will work with Staff to obtain approval for the use of the RMLD equipment. Once the equipment is approved, Southwest Gas will begin to leak survey COYLs, obtaining permission and notifying customers where necessary. The Settlement Parties intend for Southwest Gas to replace all leaking COYLs, whether determined through the leak survey process or a leak survey resulting from an odor call complaint.

Q. 35 How does the Company intend to account for and recover the costs associated with the COYL program?

A. 35 The Settlement Parties agreed that the capital investment associated with the COYL program shall be recovered through a COYL cost recovery mechanism (CCRM) that will be adjusted annually. The CCRM will be based solely on actual costs and costs eligible for recovery, and the Settlement Parties have agreed to cap the annual increase in the surcharge amount to no greater than $0.01 per therm in any single year.

Q. 36 What other checks and balances were agreed to by the Settlement Parties?

A. 36 The Settlement Parties also agreed to have the Company file a report with the Commission detailing its findings and recommendations regarding the leak surveying program. The initial report will be filed upon the completion of the first 6 months of leak surveying.

Q. 37 How many customers will Southwest Gas leak survey each year?

A. 37 As part of the Settlement Agreement, Southwest Gas commits to leak survey approximately 1/3 of the COYLs every year. Southwest Gas currently estimates that there are approximately 102,000 COYLs throughout its Arizona service territory.

Q. 38 Why do you believe this program results in rates, charges, and conditions of service that are just and reasonable and in the public interest?

A. 38 Through the Company's public awareness programs and information collection practices, it has become evident that many customers are not managing their aging COYLs. Southwest Gas submits that the COYL program will mitigate the financial burden on customers who need to replace their COYL by replacing the COYL with a Southwest Gas owned and maintained service extension line. This provides a least-cost alternative, results in a minimal cost to other customers, and replaces aging customer-owned natural gas delivery infrastructure to the benefit to all customers.

VIII. RATE DESIGN AND REVENUE ALLOCATION

Q. 39 What did the Settlement Parties agree upon for rate design?

A. 39 With respect to the residential rate design, the Settlement Parties agreed to not make any changes to the existing residential rate designs of Southwest Gas, with the exception of the changes to the low income programs mentioned previously in my testimony. As such, Southwest Gas will retain the monthly basic service charge of $10.70 and a single commodity charge, adjusted to reflect the proposed residential revenue requirement. With respect to the other rate schedules, the Settlement Parties agreed to accept the Company's proposed changes that were reflected in its Application. These changes, as well as the resulting bill impacts, are reflected in more detail in Exhibits C and D to the Settlement Agreement.

Q. 40 What did the Settlement Parties agree upon for revenue allocation?

A. 40 The Settlement Parties agreed upon an equal percentage increase among all customer classes, with the exception of the low income rate schedules.

Q. 41 Why do you believe an equal percentage revenue allocation is a just and reasonable result that is in the public interest?

A. 41 An equal percentage revenue allocation mitigates the bill impact to any particular class of customers and spreads the rate increase evenly among all customer classes. The resulting average rate increase and average monthly bill impact compares favorably to the filed positions of the Settlement Parties. The following table contains a comparison of the overall average rate increase, the average residential and low-income rate increase, and the average monthly bill impact for residential and low-income customers associated with the filed positions of the Settlement Parties, including the results of the Commission's selection of either Alternative A or Alternative B (which includes gas costs but not surcharges):

		Residential		Low-Income	
	Overall Average Rate Increase (%)	Average Rate Increase (%)	Avg. Monthly Bill Impact	Average Rate Increase (%)	Avg. Monthly Bill Impact
Company Direct	9.26%	13.55%	$5.81	16.08%	$5.20
Staff Direct	6.95%	10.31%	$4.42	11.61%	$4.04
Settlement - Alternative A	6.95%	8.11%	$3.48	2.16%	$0.70
Settlement – Alternative B	6.66%	7.77%	$3.33	1.81%	$0.59

IX. OTHER MISCELLANEOUS SETTLEMENT TERMS AND TARIFF CHANGES

Q. 42 Please explain the other miscellaneous items were agreed upon by the Settlement Parties and that were specifically addressed by the Settlement Parties in the Settlement Agreement.

A. 42 As part of the Settlement Agreement, Southwest Gas agreed to many of Staff's recommendations that were set forth in Staff's direct testimony, including recommendations pertaining to tariff changes to address sub-metering, the Yuma Manors pipe replacement project, the Company's 20-year plan to replace EVPP, the Company's Annual Gas Procurement Plan and Purchased Gas Adjustor Report, the Company's depreciation rates, and improvement in customer communications.

Q. 43 Will Southwest Gas continue the use the Incremental Contribution Method (ICM) and ICM Model as a tool in implementing its line extension policy reflected in Rule 6 of its Arizona Gas Tariff?

A. 43 Yes, Southwest Gas will continue the use of its ICM and ICM model. However, as part of the Settlement Agreement the Company agreed to submit to the Commission a revised ICM Model that prevents Southwest Gas from collecting contributions in aid of construction (CIAC) that result in an expected ROE, as generated through the ICM Model, that is more than 50 basis points above the authorized return on common equity.

Q. 44 Are there any other terms or conditions set forth in the Settlement Agreement that you would like to address?

A. 44 Yes. Consistent with Staff's recommendations pertaining to Southwest Gas' involvement in the development of gas heat pump technology, the Company agrees that all gas heat pump technology development costs shall be removed from operating expenses and that no new gas heat pump projects will be funded through the Commission-approved research and development surcharge. In addition, Southwest Gas will identify and track the Arizona customer funding of the gas heat pump technology development and propose a plan to reimburse Arizona customers for their proportionate level of funding, to be returned to customers to the extent commercial development occurs and revenues and royalties are received by Southwest Gas, and profits and royalties are received by any other entities that are affiliated with Southwest Gas.

Another key provision of the Settlement Agreement is Southwest Gas' commitment to identify cost reduction initiatives to reduce its expenses on an annual basis by an average of $2.5 million per year beginning in 2012. This commitment will continue through the end of the test year in the Company's next general rate case. I believe it is important to note that, similar to the commitment of the Company contributing $1 million to enhance the LIEC weatherization program, this is a commitment that will typically only result from a negotiated settlement and not a litigated case.

X. CONCLUSION

Q. 45 Please identify and explain some of the key benefits that you believe will be delivered to customers as a result of this Settlement Agreement.

A. 45 The Settlement Agreement is the result of a collaborative effort by the Settlement Parties to resolve a number of significant issues related to Southwest Gas and its customers. Southwest Gas believes the Settlement Agreement results in rates, charges, and conditions of service that are just and reasonable and in the public interest. In this regard, the Settlement Agreement provides substantial benefits to Southwest Gas' customers and it allows Southwest Gas to continue to provide its customers a high level of service. For instance, some of these benefits include:

- Low income customer benefits. There are several terms and commitments that particularly benefit low income customers, including, an increase in the LIRA discount from 20 percent to 30 percent; a Southwest Gas commitment to increase funding for the LIEC weatherization program with non-ratepayer funds of at least $1 million over 5 years; and a commitment to develop enhanced communication programs to increase awareness of low income programs.
- An operating Expense Reduction Commitment of $2.5 million per year.
- Enhanced rate stability. Approval of a decoupling mechanism - to mitigate rate increases in future rate proceedings and reduce the frequency of time-consuming and expensive rate cases; and to improve Southwest Gas' revenue stability, which, in turn has a positive impact on its financial profile and credit ratings - benefiting customers through reductions in future debt costs.
- A moratorium on general rate case applications for over five years – as reflected in Alternative B only.
- Continuation of a 20-year plan to replace EVPP.
- The establishment of a COYL replacement program.
- Implementation of full revenue decoupling as provided for in Alternative B, which protects customers by limiting utility profits from increased sales, protecting customers from high winter monthly bills following an extreme weather event, addressing long-term chronic decline in gas utility customer usage, aligning utility, customer and societal interests to pursue annual customer bill savings through the recently enacted Gas EE Rules, reducing

utility disincentives to support customer energy efficiency, and allowing for both upward and downward rate adjustments.

- Energy Efficiency Enhancements. Commitment to pursue immediate cost-effective EE initiatives resulting in customer annual energy savings of at least 1,250,000 therms.
- Rate Design. No increase to the monthly basic service charge to enhance customer bill savings through energy efficiency and conservation efforts.

Q. 46 Please explain why Southwest Gas believes the Commission should approve the proposed Settlement Agreement.

A. 46 First, the Settlement Agreement reflects the input of parties with disparate and often conflicting interests resulting in rates, charges, and conditions of service that are just and reasonable and in the public interest. Second, this Settlement Agreement is the product of many hours of arms-length negotiations that were open and transparent and inclusive of all Parties to this Docket – even those who indicated they would likely not be signatories to the Settlement Agreement. The provisions of the Settlement Agreement reflect the input of all the Parties to this Docket, resulting in a thorough analysis, discussion and resolution of issues by sophisticated and knowledgeable parties. Third, the Settlement Parties have undertaken a very careful and comprehensive negotiation process whereby through compromise they each have agreed to specific terms and conditions as set forth in the Settlement Agreement. The Settlement Parties are knowledgeable and experienced regarding these issues and have used their collective experience to produce appropriate, well-founded recommendations. To that end, it is the Settlement Parties' intent that in conjunction with the approval of this Settlement Agreement the Commission approve one of two options for revenue decoupling detailed above - either the partial decoupling methodology (Alternative A) or the full revenue decoupling methodology (Alternative B). Alternative A and Alternative B were carefully negotiated and during the negotiation process, the Settlement Parties considered the type of decoupling mechanism and the necessary accompanying overall revenue increase, allowed return on common equity, fair value rate of return, and customer benefits and protections unique to each alternative in reaching their recommendations.

Finally, Southwest Gas believes the Settlement Agreement provides significant benefits to its Arizona customers, while providing its shareholders a period of regulatory certainty and a meaningful opportunity to recover costs and earn a reasonable rate of return on their utility investment. Indeed, several of the customer benefits identified above would likely not have been available to customers through a litigated proceeding. In further support of my prepared direct testimony and the overall reasonableness of the Settlement Agreement, I incorporate by reference into this testimony and refer the Commission to the direct testimony that Southwest Gas previously filed with the Commission in this docket. That testimony establishes important facts that are the foundation of Southwest Gas' support for the Settlement Agreement.

Based upon the foregoing, I urge the Commission to approve the Settlement Agreement, including the selection of either Alternative A or Alternative B in its entirety, but preferably Alternative B for the reasons I noted earlier.

Q. 47 Does this conclude your prepared direct testimony in support of the proposed settlement agreement?

A. 47 Yes.

SUMMARY OF QUALIFICATIONS
JOHN P. HESTER

I graduated from Northern Illinois University in 1984 with a Bachelor of Science degree in Economics. I subsequently earned a Master of Arts degree in Economics from Northern Illinois University in 1986.

In 1986, I began working as a Statistical Research Specialist at the Illinois Department of Energy and Natural Resources. My responsibilities included analyzing resource planning and energy issues affecting the State of Illinois.

I joined the Illinois Commerce Commission as an Economic Analyst in the Rate Department in 1987. My responsibilities at the Illinois Commerce Commission primarily involved performing cost-of-service studies and designing rates for gas, electric, water and sewer utilities.

I started my employment at Southwest Gas in 1989 as a Regulatory Analyst in the Rate Department. Later that year, I was promoted to Regulatory Specialist. My duties in the Rate Department involved working on rate case applications, regulatory compliance filings, and purchased gas adjustment filings in the areas of cost allocation and rate design.

In 1991, I began working in the Gas Supply Department on a rotational assignment. I was permanently transferred to the Gas Supply Department in 1992 and promoted to Senior Specialist. I was subsequently promoted to the position of Supervisor/Gas Purchases in 1994. My responsibilities in the Gas Supply Department concentrated on the areas of gas acquisition, spot and term contract negotiation, and administration of pipeline capacity release transactions.

In 1999, I was transferred to the Pricing and Tariffs Department and promoted to the position of Director, where I was responsible for the development of Southwest Gas' rate design and tariff proposals. Later, in 2002, I was appointed to the position of Director/Regulatory Affairs and Systems Planning, where I oversaw the Company's regulatory and government relations, as well as planning activities related to gas supply acquisition and distribution infrastructure.

In 2003, I was promoted to Vice President/Regulatory Affairs and Systems Planning, which encompassed management of Southwest Gas' state and federal rate and tariff activities, regulatory and governmental relations, and systems planning. I became Senior Vice President of Regulatory Affairs and Energy Resources, in 2006 when gas supply commodity and interstate transportation management was added to my previous responsibilities.

In addition to my duties at Southwest Gas, I serve on the University of Nevada Las Vegas Department of Economics Executive Advisory Board, and the New Mexico State University Center for Public Utilities Advisory Council.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE INVESTIGATION OF REGULATORY AND RATE INCENTIVES FOR GAS AND ELECTRIC UTILITIES	) DOCKET NOS.) E-00000J-08-0314) G-00000C-08-0314) DECOUPLING WORKSHOP)) SPECIAL OPEN MEETING

At: Phoenix, Arizona
Date: April 16, 2010
Filed:

EXHIBIT
tabbies
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ADMITTED

REPORTER'S TRANSCRIPT OF PROCEEDINGS

VOLUME II
(Pages 148 through 362, inclusive.)

ARIZONA REPORTING SERVICE, INC.
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Prepared for:

By: COLETTE E. ROSS
Certified Reporter
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raise on this, and no one has, is administrative complexity if you are talking about a simple true-up that takes the authorized revenue requirement and makes sure that you get it, no more, no less, regardless of fluctuations and sales. My hope is we can meet that challenge so that then they can go on to develop rate designs that reward efficiency rather than constraining it, which has been the tension historically.

CHMN. MAYES: Okay. Thank you very much.

All right. Let's go, without any further ado, to RUCO and Jodi Jerich.

And, Jodi, before the break I read to the utilities into the record a portion of RUCO's filed comments in this docket and asked them to respond to the concerns and issues that you have outlined. And so I figured who better to talk to all of that than you. So the floor is yours.

MS. JERICH: Well, thank you, Madam Chairman, Commissioner Newman.

RUCO filed comments a couple weeks ago in response to the notice of inquiry. And in it, we raised four elements that should be considered before further rulemaking. And that is any kind of decoupling or other kind of mechanism be proven to be cost effective, contain a commitment to energy efficiency with identified goals, and have a high degree of accountability, and, finally, have a cap on the amount that's to be recovered. And to promote four considerations, even though RUCO has in the past been uncomfortable with decoupling and still does not embrace decoupling, and through these workshops we would like to hear more about why we think people think decoupling is such a great idea, I had put forth in our filing the Idaho Power pilot program.

But it was for a single company for a three-year term. And in October of 2009, the company, showing that they had such positive results with this mechanism, which they did not call a decoupling mechanism but a fixed cost adjustor, that they went forward and applied for permanent status. And that is currently being considered by the Commission. And attached to my filing was the company's application detailing its support for complete rollout.

And what I found really interesting in it is that in the first two years there was, one year had a refund and the other year had an adjustor. So it, it doesn't always inure to the benefit of the utility. And I found that very interesting.

And I understand from this morning there was some concerns about a pilot project basis. But the

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EXHIBIT
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At: Phoenix, Arizona

Date: November 4, 2010

Filed:

REPORTER'S TRANSCRIPT OF PROCEEDINGS

ARIZONA REPORTING SERVICE, INC.
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Certified Reporter
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they need to.

Okay. Any other thoughts on item No. 2, the Policy Statement No. 2? Mr. Schlegel?

(No response.)

CHMN. MAYES: Okay. Policy Statement No. 3, we did have some discussion on this item, didn't we?

Mr. Pozefsky, do you want to start it off?

MR. POZEFSKY: I do. And my thoughts are more on the line of a comment than they are any suggested changes. Really I kind of am considering this in the perspective of all these, but 3 hits on it, 4, 5, but in particular 3. That first sentence, you know, when we, when I first saw this policy statement proposed, and I will make this brief, I ran down the hall and thought jeeze, you know, the Commission has lost their mind, they are putting out a policy which pretty -- that is going to mandate revenue decoupling. And then I went over it a couple more times and I thought okay, okay, it is not that bad, they are talking about revenue decoupling and other options.

And that was always a concern, you know, because we are the ones that are going to live with this stuff in the rate cases when we see them. And I know what is going to happen is, as soon as this policy goes out, every utility in the state that has an interest in this is going to come in with a decoupling proposal, which is okay. I mean that's good, that's something we need to consider and that's something that I want to see, but I also know that if there is an alternative mechanism or one that makes more sense, even if the decoupling mechanism doesn't make sense, this is going to get literally rammed down my throat as far as that there may be a preference here for decoupling.

And, for instance, when you say in the first sentence, or when it is stated in the first sentence on paragraph 3 revenue decoupling may offer significant disadvantages, or, excuse me, advantages over alternative mechanisms for addressing financial disincentives, disincentives to energy efficiency as it establishes better certainty of utility recovery of authorized fixed costs and better aligns utility and customer interests, my concern is that sort of language, is that going to be establishing a preference, is that going to be saying sort of, well, the Commission looks at other alternatives as being lesser or that revenue decoupling right off the get-go is going to be better.

So that's my concern. I didn't, we didn't put any comments in our things about it. But one of the things I was hoping to get out of this is a better understanding of what the Commission, in fact, is really trying to say with this policy statement. Is it saying, hey, look, we are going to be considering revenue decoupling and you should?

We consider them important because we all agree energy efficiency is the goal. We all like it. There is a difference perhaps in how best to do it. We like to think that the Commission is going to keep the slate open and consider all the different proposals. We would hate to see a preference out there and then have that be used against us if in fact it makes more sense to consider something else in the case.

CHMN. MAYES: Okay. Commissioner Pierce.

COM. PIERCE: Yes, I appreciate the comments. But it seems to me, for consistency and for regulatory certainty, I think we are saying that decoupling is the standard, prove something else. I don't mean to you. And I think that is -- do you have a problem with that? That's just what you get used to. If there is something that you think in that case that would be better, if that option is available for you to argue that, isn't that adequate?

MR. POZEFSKY: Well, I, I was hoping Ms. Jerich would be in here.

COM. PIERCE: She is.

CHMN. MAYES: She is.